PULP & PAPER

JUNE 1956 – 30th Year

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New Plans at the Institute page 76
More and More Coating page 90
New Overlay for Digesters page 125

Far cry from Bunyan!
Ultra-modern wood plant
at Wisconsin Rapids

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Use Cyanamid's liquid alum

On a solids content basis, delivered cost of liquid alum is usually less than cost of dry alum.

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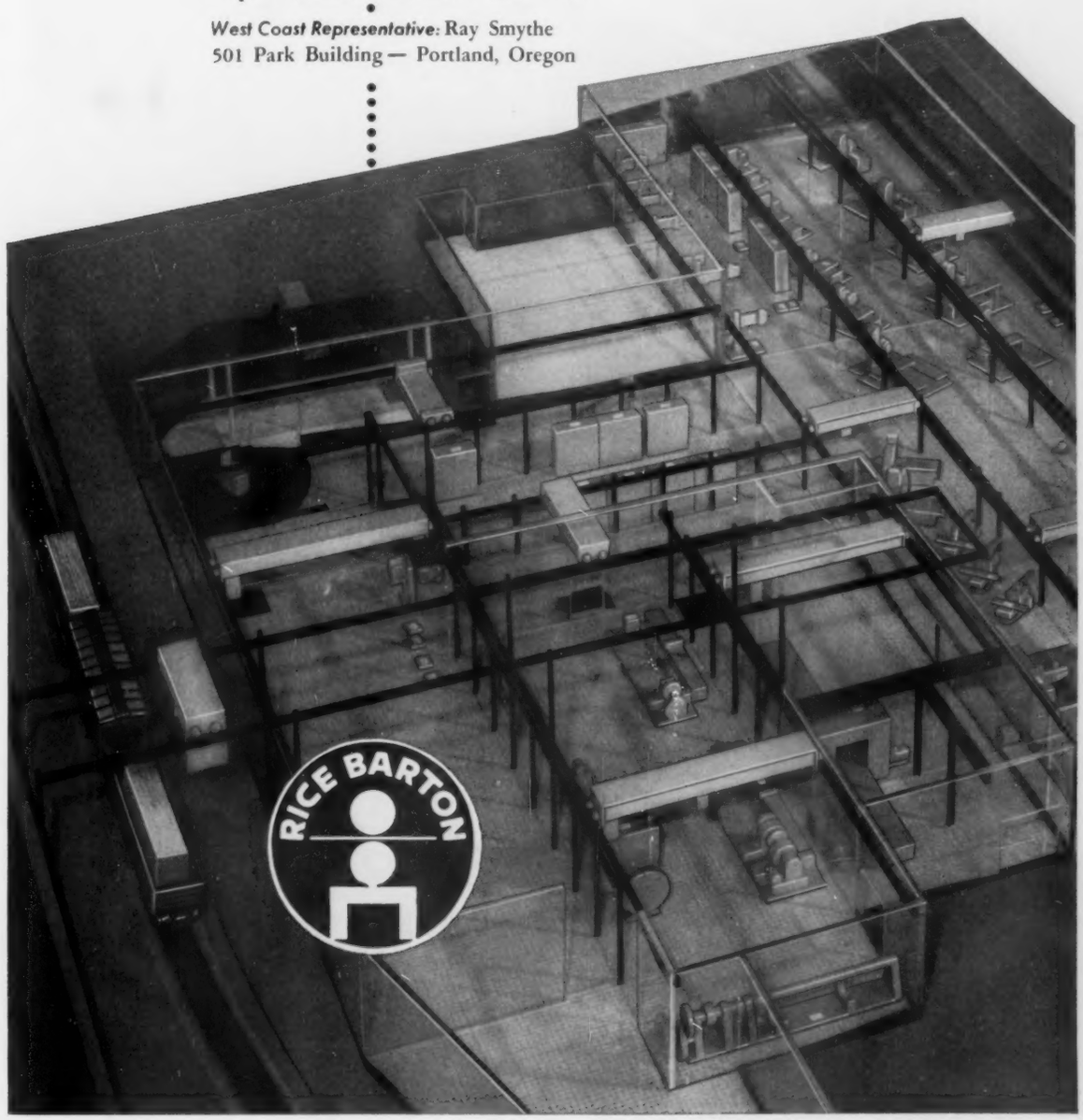

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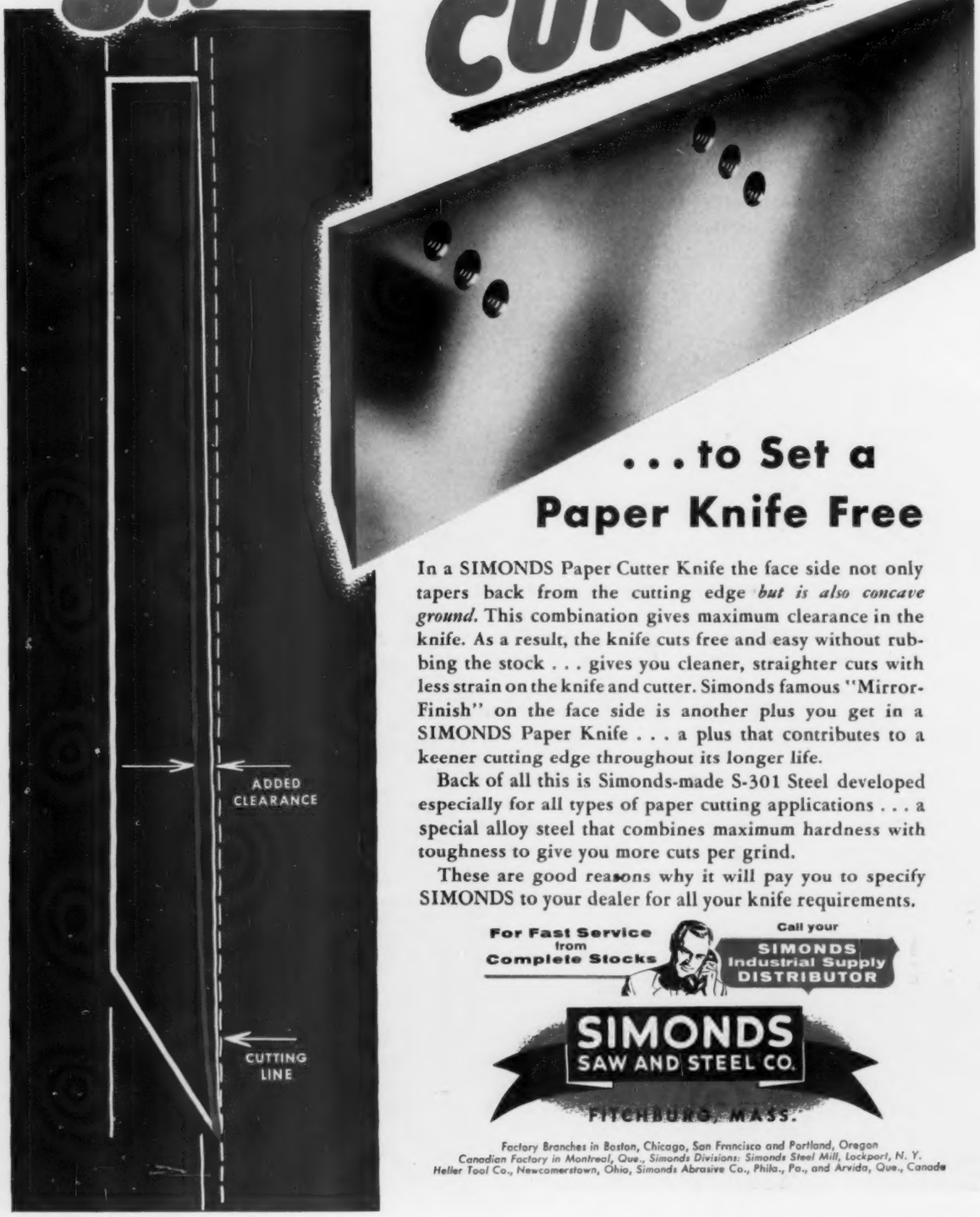

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In a SIMONDS Paper Cutter Knife the face side not only tapers back from the cutting edge *but is also concave ground.* This combination gives maximum clearance in the knife. As a result, the knife cuts free and easy without rubbing the stock . . . gives you cleaner, straighter cuts with less strain on the knife and cutter. Simonds famous "Mirror-Finish" on the face side is another plus you get in a SIMONDS Paper Knife . . . a plus that contributes to a keener cutting edge throughout its longer life.

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PULP & PAPER

June 1956

VOLUME 30
NUMBER 6

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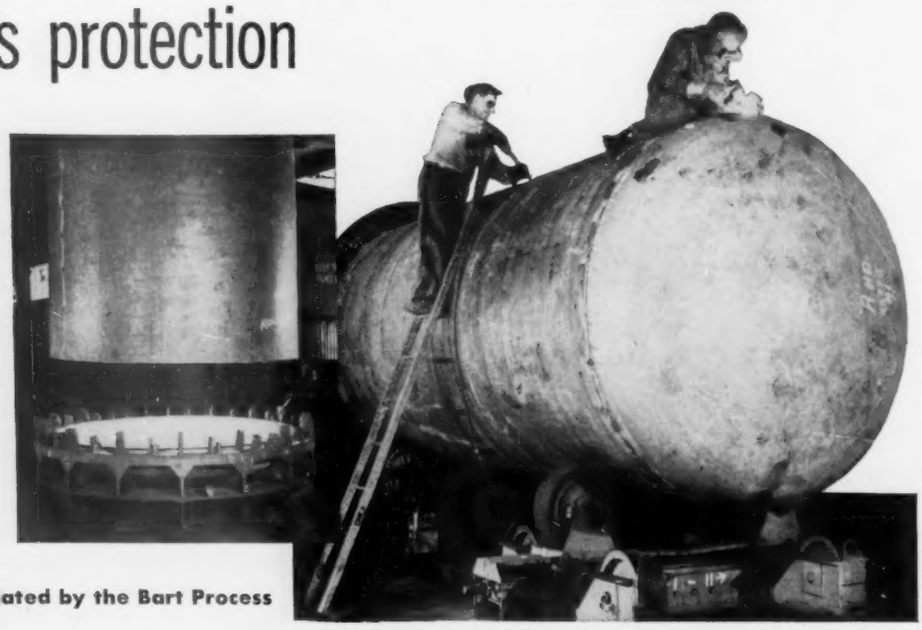
Nickel Plated Steel gives steel's economy plus nickel's protection



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PULP & PAPER EDITOR READS HIS MAIL

Society of American Foresters Official Queries P&P Report

Washington, D.C.

Editor: On the "Editor's Page" of your April issue is this statement about the Society of American Foresters:

"This group has long been recognized as vigorous champions of conservation, and some of its critics have felt that in its enthusiasm, facts have often been somewhat slighted if they didn't fit in with their avowed principles."

This Society does not object to criticism; in fact we welcome it because, as a professional organization, the activities of our members are governed by a code of ethics. However, such an allegation, unsupported by documentation of instances when "facts have often been somewhat slighted," made by critics who are not named or identified, is not the kind of a statement that is taken kindly, by our members, especially those in the pulp and paper industry.

B. E. Allen of Union Bag & Paper Corp., and E. F. Heacox, of Weyerhaeuser Timber Co., are members of the Council of the Society (our governing body). Clarence Richen of Crown Zellerbach Corp. is one of our associate editors. Numerous other foresters active in the pulp and paper industry are officers of our various divisions, sections and chapters. In fact, the largest single group of our industrially employed membership is in pulp and paper.

In fairness to this group, many of whom are readers of PULP & PAPER as well as members of this Society, I ask that you provide us with specific instances when "facts have often been somewhat slighted if they don't fit in with their (Society of American Foresters) avowed principles." If such instances are not known personally to you from first-hand knowledge, then I ask that you name the anonymous critics or identify the sources of such criticism.

HENRY CLEPPER
Executive Secretary
Society of American Foresters

PULP & PAPER'S Reply:

Mr. Clepper: We respect and admire your championing of the SAF. The nationally important issue involved in this correspondence, and the subject of our April editorial, is not mentioned in your letter. This is the U.S. Forest Service's Timber Resource Review—perhaps the most controversial forestry undertaking of the postwar years.

We would not want to personalize this vital national issue by exposing names of informants, as you request. In fact you know that American courts have determined that a publication does not have to reveal names of its informants. There are good sound American reasons for the decision of the courts.

Anyone who followed the talks and the debate on TRR at Paper Week, and elsewhere at meetings in this country, as our editors have done, would be aware that there is some impatience among many leaders because societies interested in our forests—not only SAF—seem to be sidestepping this issue. Some organization leaders or spokesmen have taken the view that even if the Timber Resource Review is inaccurate, the general public should not be told; that it's bad for national morale to debate TRR claims or theories.

We would welcome comment from you on TRR. Or from any of your members. We will give all the space possible to these views of such qualified spokesmen.

We believe that your powerful 56-year-old organization will be derelict in its service to forestry if it makes no move to stimulate the free discussion of TRR and to assure that unbiased, factual forestry information is presented in the forthcoming revision of TRR.

Divergent views, representing all shades of opinion on TRR, as it now stands, are to be found wherever men of the timber world meet.

We know that these currents of opinion run strong within the SAF membership. Surely, these most powerful and divergent opinions point up the need for a major overhaul of the TRR. Let's not dilute this important consideration, which has so much potential influence on the future of our forest industry planning and public attitude towards industry, by centering attention on our reporting methods.

We are the only publication which has given any substantial attention to this controversy. We report truthfully and with responsibility whatever we can learn about it.—ED.

Authoritatively Reflects Growth

Middletown, O.

Editor: Over the years I have watched PULP & PAPER grow and, in turn, authoritatively reflect the growth of the industry, until today I must confess it has far exceeded my expectations.

Your pictorial coverage of installations always leaves me surprised, because I know from first hand knowledge the difficulty of securing a word-picture, and the almost impossibility of securing a good installation shot because of space limitations.

I am sure that those who read PULP & PAPER have as near a personal visit to all points of Paper Industry interest as is possible to achieve.

Obviously, your forecasts and summaries of the various phases of business are always "must" reading with me.

I want to congratulate you on a job consistently well done, and to wish for a future as bright as you have proven the past could be.

C. R. CRAWFORD
President, The Black-Clawson Co.

Best Worldwide Information

New Canaan, Conn.

Editor: Since my retirement as president of Waldhof (major pulp and paper co. of West Germany), I expect to spend my winters here in the States and the summers abroad.

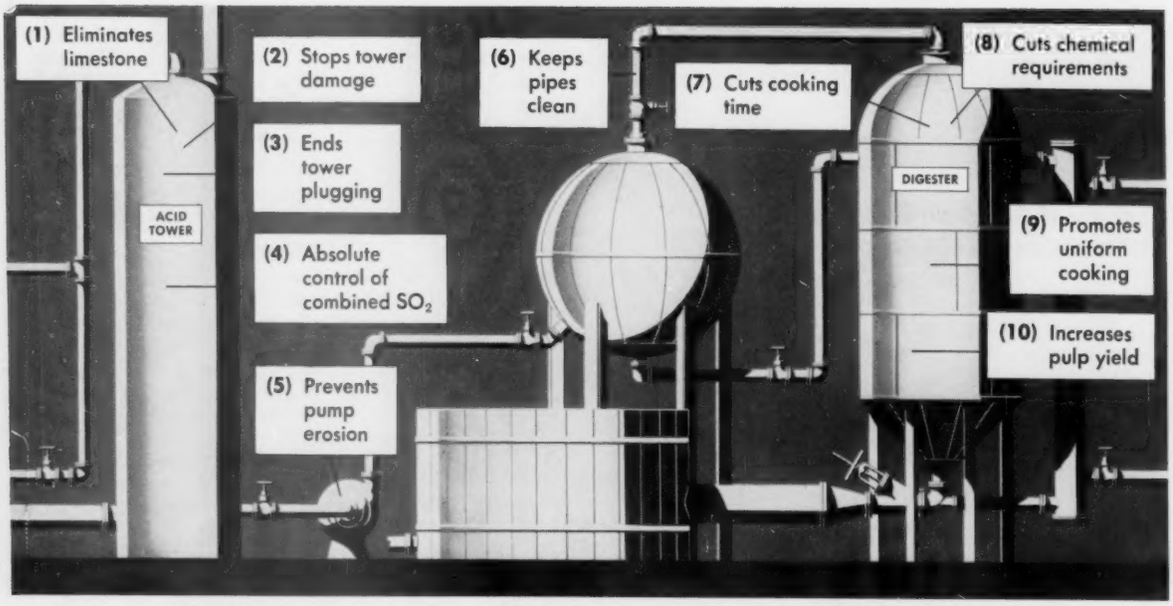
I look forward to your WORLD REVIEW NUMBER. I have always considered it the most complete source of information regarding world's pulp and paper production and sales.

MAX H. SCHMID
Director and retired President,
Zellstofffabrik Waldhof,
Wiesbaden, Germany.

HERE'S HOW to address your letter to this department:

No anonymous letters will be considered but names may be withheld if desired.

The Editor
PULP & PAPER
1791 Howard Street
Chicago 26, Illinois



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10 Ways Ammonium Bisulphite Pulping Can Help Increase Your Pulp Mill Profits:

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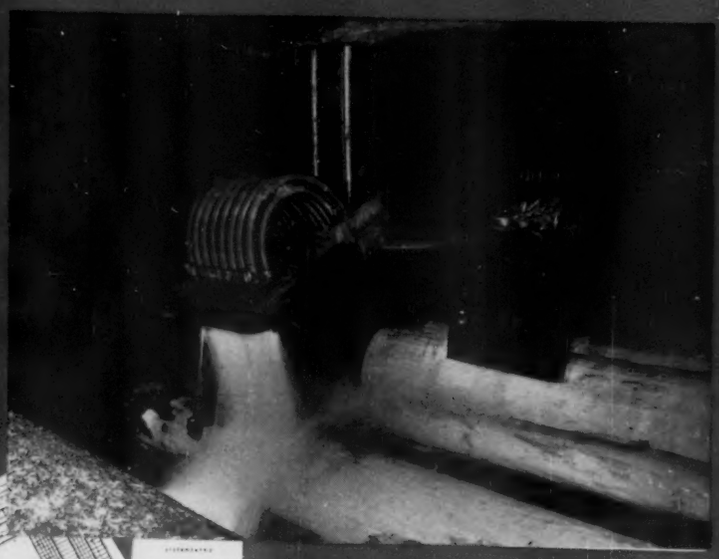

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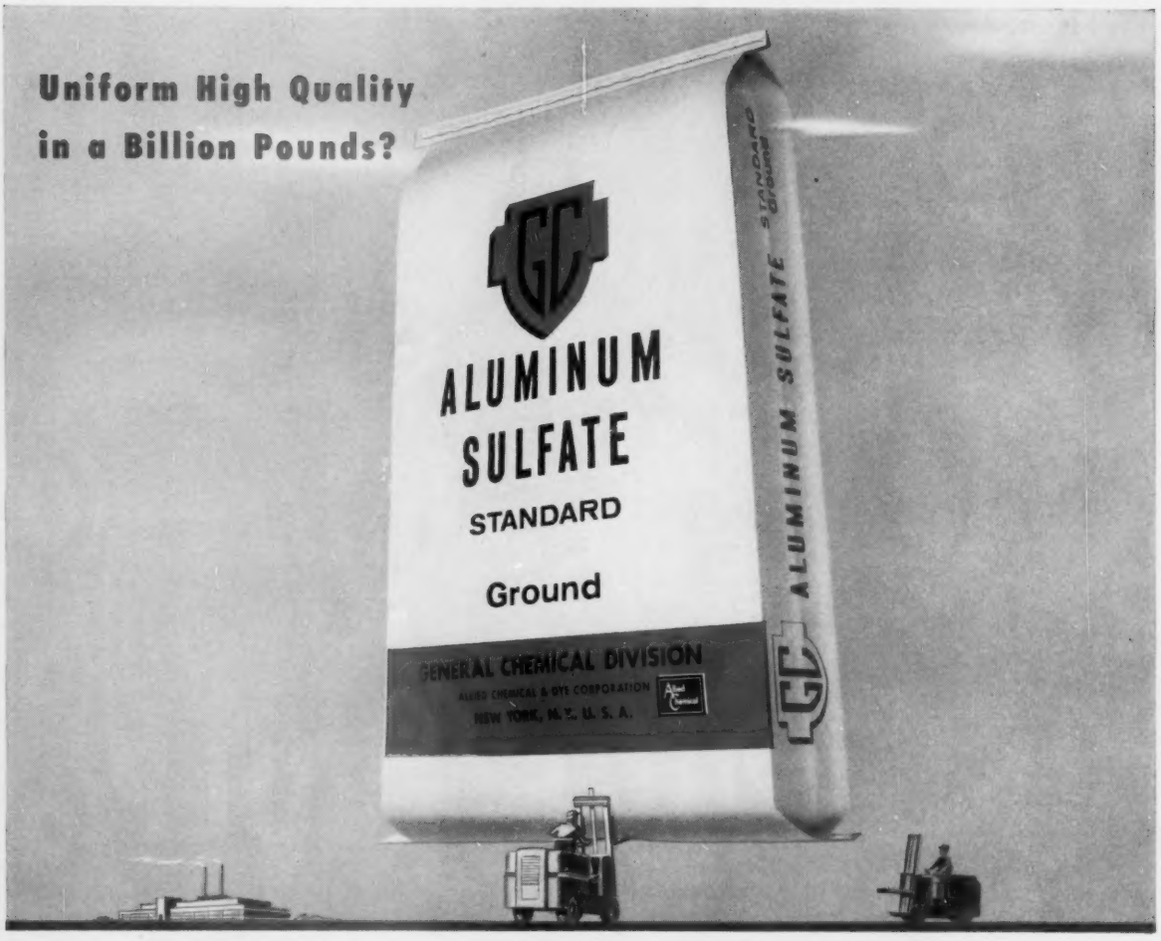

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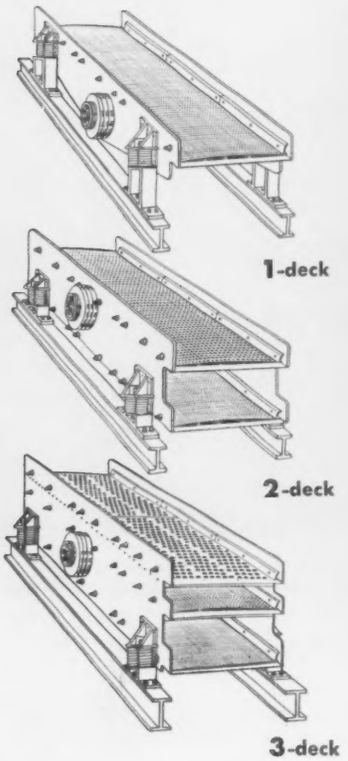
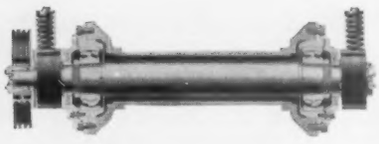
MEAD *pulp*

LINK-BELT CA Concentric Action Vibrating Screens

for high volume chip cleaning



Link-Belt CA double deck vibrating screen separating oversize chips, slivers and sawdust from wood chips. Note how quickly the chip load is cleared from the top deck.



Vibrating mechanism is grease lubricated and has two high capacity, self-aligning roller bearings. Efficient, frictionless labyrinth seals exclude dirt and abrasive dust. Spring-controlled centrifugal type counter-weight eliminates excessive resonant motion when starting and stopping.

Powerful screens thoroughly separate sawdust and slivers

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Scriptite 40 will impart outstanding wet strength for your paper product—and at the same time improve dry tensile, mullen, wet rub resistance, dimensional stability and folding endurance.

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For laboratory sample of Scriptite 40 and technical bulletin, write to Monsanto Chemical Company, Plastics Division, Room 920, Springfield 2, Mass.

The Monsanto Line of Paper Resins also includes

SCRIPTITE 54 ... *for outstanding water resistance and both wet and dry rub resistance*

SCRIPTITE 52 ... *in combination with formaldehyde to give water resistance to folding boxboard and to jute liner*

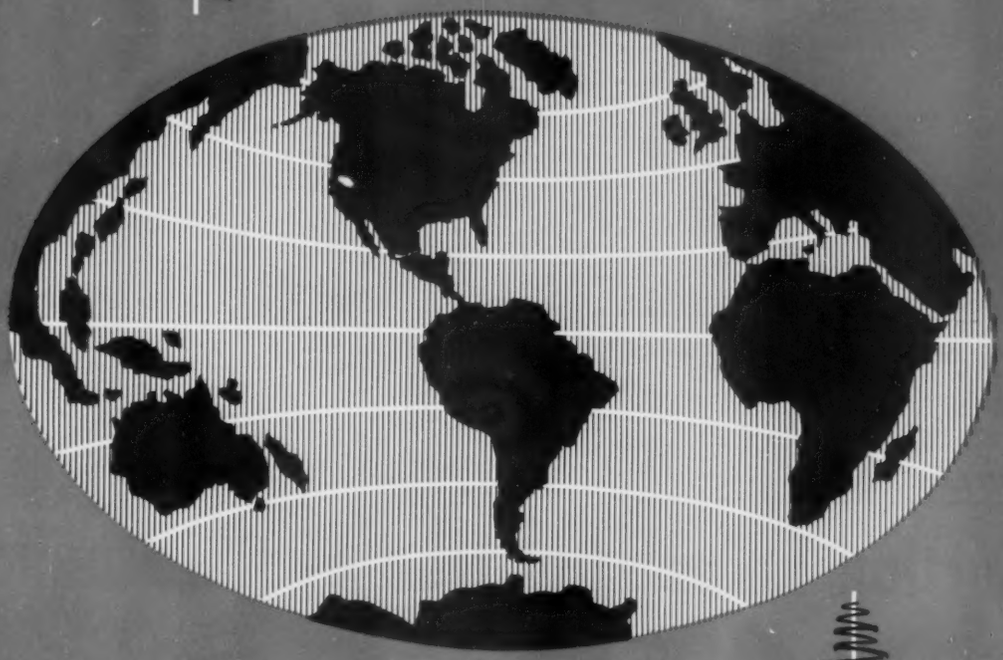
SCRIPTITE 50 ... *for unsurpassed printability and improved surface characteristics on boxboard*

SCRIPTITE 33 ... *a melamine wet-strength resin*

MONSANTO

*SCRIPTITE: REG. U. S. PAT. OFF.

WOOD PULP
PAPER



Offices and representatives in 60 cities in the United States, Europe, Latin America, Africa, and Asia

BULKLEY DUNTON & CO., INC.
BULKLEY DUNTON PULP CO., INC.
BULKLEY DUNTON PULP CO., LTD.—LONDON
BULKLEY DUNTON PAPER CO., S.A.
BULKLEY DUNTON CELLULOSE EXPORTS, INC.
BULKLEY DUNTON PAPER (FAR EAST) CO., INC.
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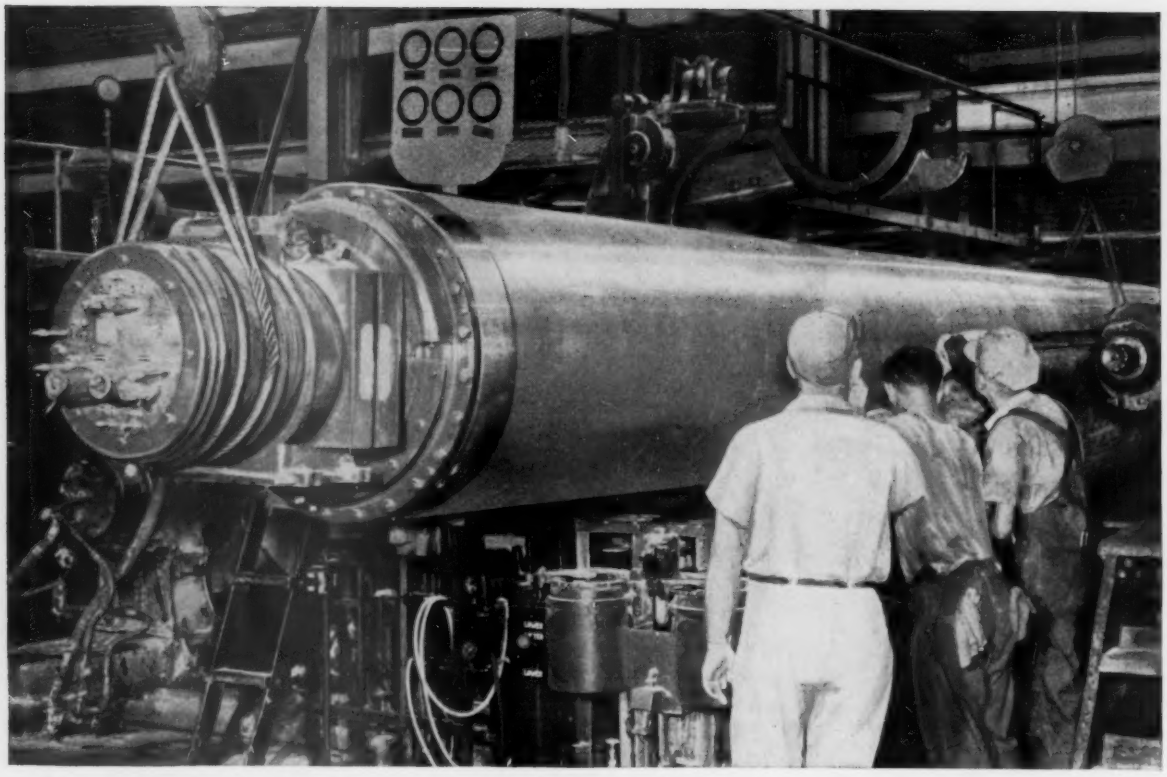
In New England—CARTER RICE STORRS & BEMENT

BULKLEY-DUNTON
ORGANIZATION
295 MADISON AVENUE, NEW YORK 17, N. Y.



Tops them all. This is the largest Monel nickel-copper alloy press roll ever installed on a Fourdrinier. It is 240 inches in length, has a diameter of 36 inches. The dense, smooth surfaces of Monel have a high degree of "wettability", provide excellent protection against slime and fibre build-up. Because of its corrosion resistance, the roll is not subject to macro-etching.

Largest Monel press roll

Suction holes stay free of fibre build-up

Monel* nickel-copper alloy combines good corrosion resistance with two other important properties . . .

High strength. And ease of fabrication.

That's why Monel press rolls fit so smoothly into the high-speed paper machine picture . . .

They're safe to operate at higher "nip" pressures. You can design for greater open area — and improved suction efficiency.

Have you a problem?

Get our free, 34-page booklet, "Practical solutions for metal problems in Pulp and Paper Mills." It shows—with pictures of actual installations—how many mills have solved their problems. And for other information—or for help in designing one of your own paper machines—write our Pulp and Paper Section. Their services are yours for the asking.

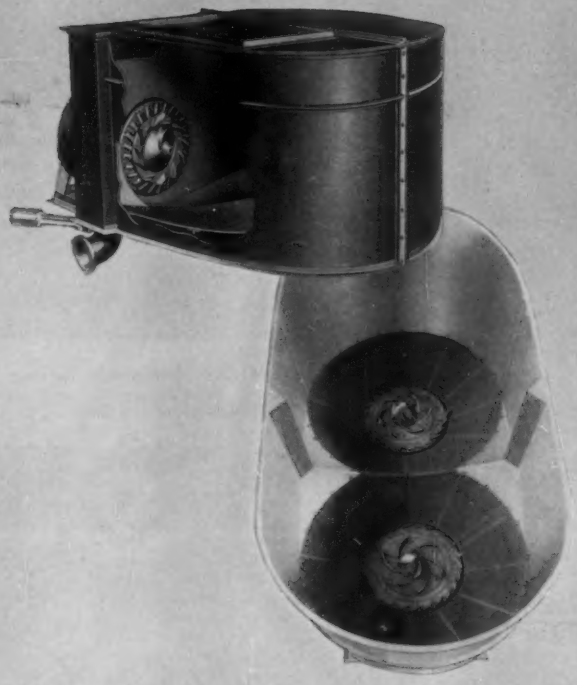
*Registered Trade Mark

THE INTERNATIONAL NICKEL COMPANY, INC.
67 Wall Street New York 5, N. Y.

The big picture. Examining the huge press roll just before installation at Union Bag & Paper Corp. plant, Savannah, Ga. The roll was fabricated by welding together three 120° sections.

Close-up view. The Fourdrinier on which this Monel alloy roll is to be used has a wire width of 236 inches, and is designed for a speed of 2,000 feet a minute.

INCO TRADE MARK **Monel... *for minimum maintenance***



This is BLACK-CLAWSON

...still the leader in pulper sales and experience

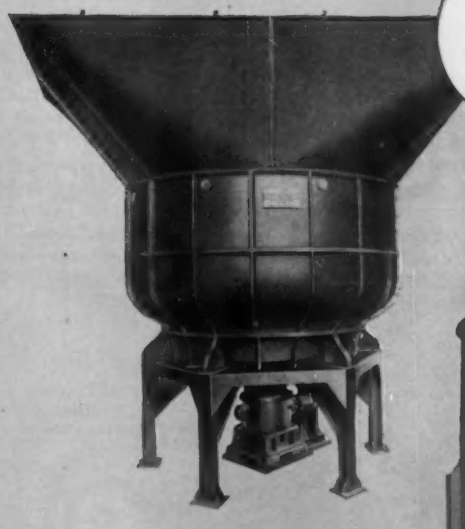
Right now the Shartle Division has an order backlog for over 56 Hydrapulpers®. Add this to the over 1500 in service all over the world and you have convincing evidence that Shartle and the Hydrapulper still lead the field in pulper building experience and sales.

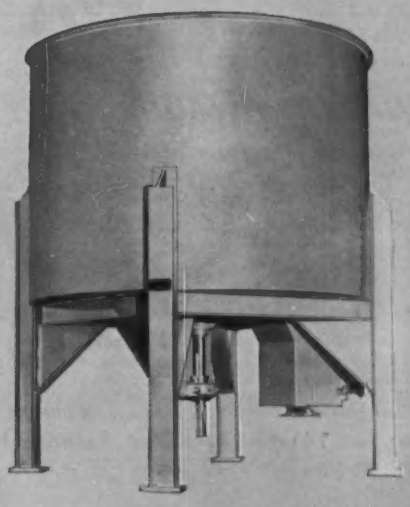
From the complete line of Shartle Hydrapulpers, Hydrabeaters, Duopulpers and broke pulpers, you can select a unit to meet your specific mill requirement... a pulper that will give you the exact degree of defiberization you need at less HP/T per day.

Rely on the unmatched experience and engineering skills of Black-Clawson. Contact the Shartle Division for full details on pulping, deinking, blending, mixing or broke pulping applications.

The **BLACK-CLAWSON** *Company*

SHARTLE DIVISION • MIDDLETOWN, OHIO





IT TAKES JUST ONE MINUTE for these LIGHTNIN Mixers to equalize color in these 6,000-gallon machine chests at The J. P. Lewis Co.

One-minute color change

adds as much as an hour to this mill's productive day

What could *one-minute color control* do for you?

For The J. P. Lewis Co., Beaver Falls, N. Y., it means 80% less wet broke on the machine—plus a clear dividend of 40 to 60 minutes' productive machine time per day.

At this mill, groundwood stock of 4% consistency flows into 6,000-gallon beater chests where LIGHTNIN Mixers turn it over rapidly, keeping it uniform.

In just *one minute,* the LIGHTNINs disperse color additions evenly throughout the stock.

Final color adjustment takes place at the machine chests, also equipped with LIGHTNIN Mixers. Again, the LIGHTNINs bring 6,000 gallons of stock to full uniformity—in one minute.

No more rethreading

Results: The off-color sheet, previously stripped off the machine as wet broke, has been reduced by four-fifths. The small amount of off-color sheet now produced runs through to the rewind rolls, where it is removed as dry broke. It is no longer necessary to rethread the drying rolls and calendar stack when color is changed. J. P. Lewis gets up to an hour more production per day off the machine.

The LIGHTNINs require only routine lubrication. And chests are easy to clean—have no baffles to cause clogging and rotting; can be hosed down to pump suction without losing a minute's production.

How to get results

Want to get more out of *your* chests? Put LIGHTNIN Mixers into them. We can equate what you want done, with the horsepower it takes to do it. You get the exact power-speed combination that matches your needs.

LIGHTNINs are giving good results on stock consistencies up to 6%, in chests as large as 285,000 gallons. Results are guaranteed, unconditionally.

For quick, competent help, call your LIGHTNIN Mixer representative. Or write us today.

Lightnin® Mixers

MIXCO fluid mixing specialists

FAST-FLOWING STOCK tumbles and rotates uniformly, driven by LIGHTNIN four-blade propeller; does not vortex, even in unbaffled chest.

FOR LATEST MIXING INFORMATION and full description of LIGHTNIN Mixers, send for these helpful bulletins:

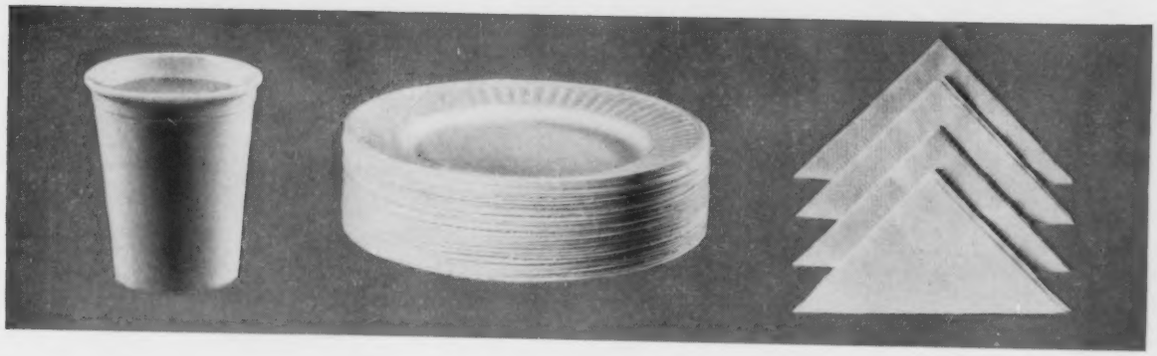
- ☐ B-102 Top or bottom entering; turbine, paddle, and propeller types: 1 to 500 HP
- ☐ B-103 Top entering; propeller types: ¼ to 3 HP
- ☐ B-108 Portable: ⅛ to 3 HP
- ☐ B-104 Side entering: 1 to 25 HP
- ☐ B-112 Laboratory and small-batch production types
- ☐ B-109 Condensed catalog showing all types
- ☐ B-111 Quick-change rotary mechanical seals for pressure and vacuum mixing
- ☐ B-107 Data sheet for figuring mixer requirements

Check, clip, and mail with your name, title, company address to:

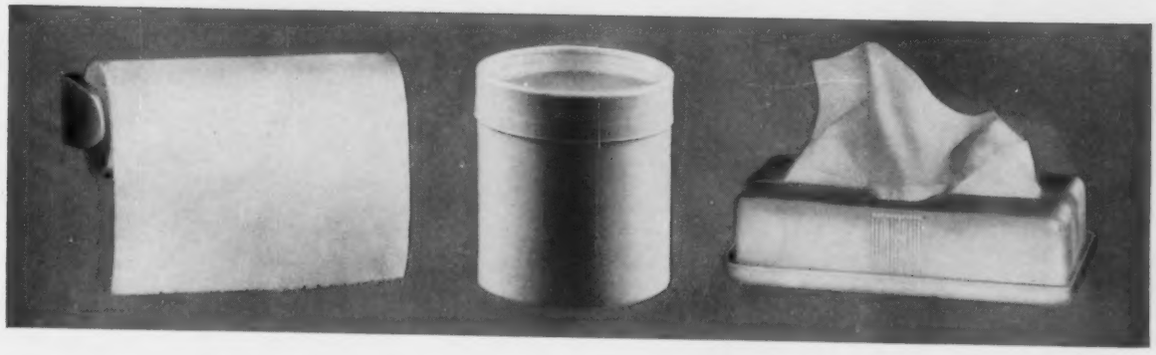
MIXING EQUIPMENT Co., Inc. 141-f Mt. Read Blvd., Rochester 11, N. Y.

In Canada: Greey Mixing Equipment, Ltd., Toronto 10, Ont.

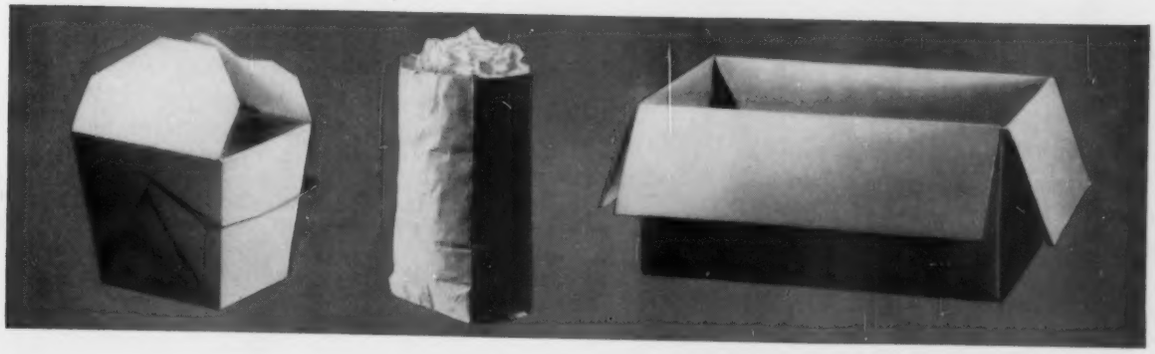
BAGS OR BOXES, CUPS OR CARTONS,



WHEREVER YOU NEED WET-STRENGTH



SPECIFY THE BEST—KYMENE® RESIN



Paper Makers Chemical Department **HERCULES POWDER COMPANY** INCORPORATED *965 King Street, Wilmington 99, Del.*

PP56-1

Now it's 4 for St. Regis ...all by INFILCO

Sludge "fit" for reburning

St. Regis Paper Co. installed three more ACCELATOR® treating units, duplicates of a unit installed in 1951, because—in addition to providing treated water of the desired characteristics — the "ACCELATOR" unit produces a calcium carbonate sludge suitable for reburning to provide quicklime for other plant requirements.

To be suitable for reburning, the calcium carbonate sludge should be substantially free from magnesium and silica to prevent the "build-up" of these constituents in other plant processes in which the calcined sludge is used.

The "ACCELATOR" treating unit is particularly well adapted to producing high purity calcium carbonate sludge because it utilizes mechanically maintained slurry recirculation, regardless of through-put. This affords rapid and complete dispersal of the treating chemical into the water slurry mixture, thus avoiding localized over-treatment which precipitates the unwanted magnesium hydroxide with consequent silica absorption.

For producing calcium carbonate "fit to burn" use "ACCELATOR" treating plants as many other Kraft mills have done.

Write for Bulletin 1825-PP-17

P.S. The "ACCELATOR" unit is also suitable for clarification and color removal problems.

Inquiries are also invited on all other water and waste treating problems including coagulation, precipitation, sedimentation, filtration, flotation, ion exchange and biological processes.

INFILCO INC.
General Offices
Tucson, Arizona

*The **one** company offering equipment for **all** types of water and waste treatment*

INFILCO

5617

Field Offices throughout the United States and foreign countries

How to CUT YOUR KNIFE COSTS as well as paper

LONG-LASTING, HAIRLINE CUTTING ACCURACY—Special high temper, close grained 866 alloy steel face.
EASY INSTALLATION—Non-distorting, shock-resisting alloy steel back. Holes accurately drilled and tapped.
CLEANER CUTTING—Accurately beveled and expertly honed to a razor edge for standard use or special requirements.
FREE AND EASY CUTTING—Micrometer ground concavity and taper on face for proper clearance . . . to prevent dragging and binding.

You can save on knife re-sharpenings and replacements with Disston 866 Paper Knives. Edges stay sharp, won't roll under or chip out.

Whether the material you cut is tissue paper, cardboard, kraft, machine finish or coated papers—Disston 866 Paper Knives stay sharp. They need less frequent sharpening, few replacements.

You can be sure, too, that Disston 866 Paper Knives will arrive in perfect condition. Each is oiled, wrapped in moisture-resistant paper and bolted to a special board with cutting edge fully protected.

Your nearby Disston Distributor or Harris-Seybold Branch provides prompt service. Ask today about Disston 866 Paper Knives.

See your distributor, too, for

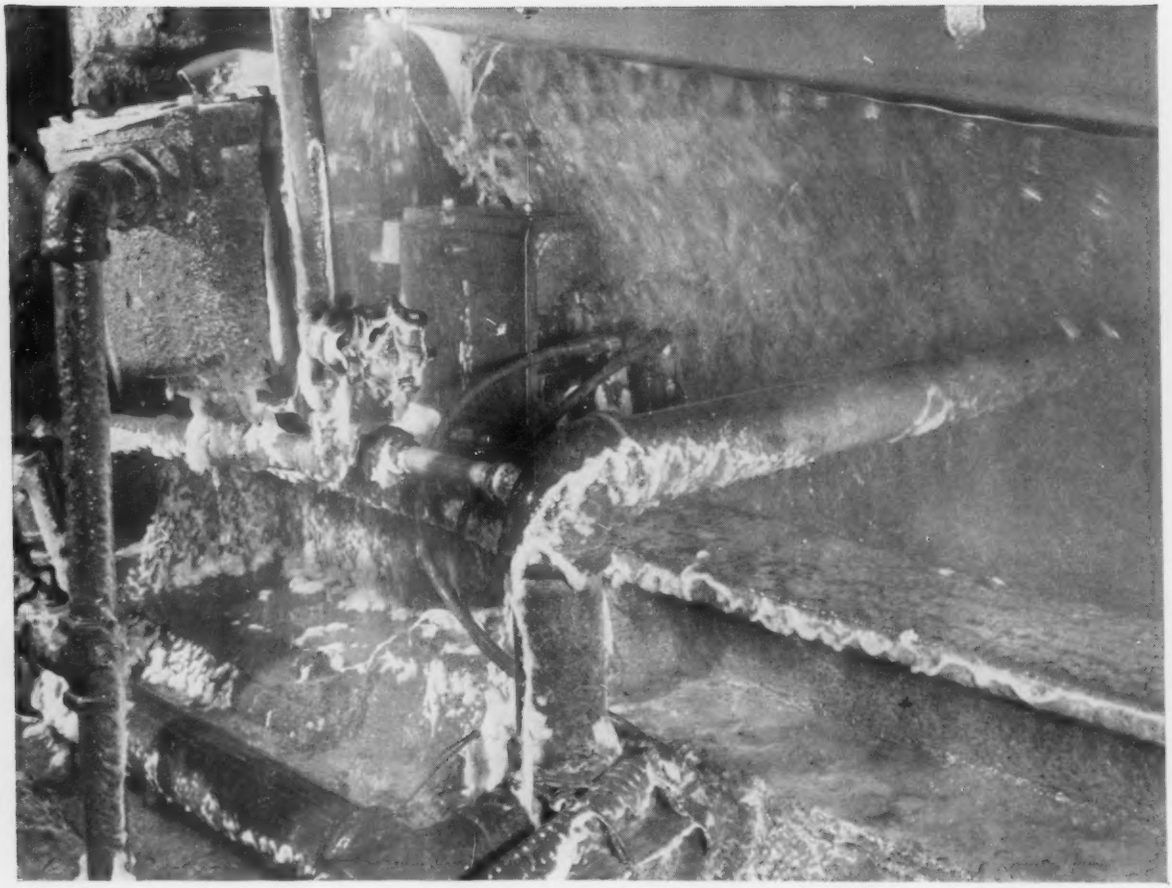
DISSTON CHIP-MASTER CHIPPER KNIVES

Made of one solid piece of highest quality alloy steel. Ground super-sharp at the knife edge; super-smooth on the knife face. Specially heat-treated and tempered-hard and tough at the cutting edge; softer at slots to absorb shocks. Long edge life; fast re-sharpening; low direct knife cost. Uniform chips; minimum bruising and sawdust.

Get this latest full-of-facts booklet on how to choose, use and care for paper cutting knives. 32 pages. Fully illustrated.

Henry DISSTON DIVISION
H. K. PORTER COMPANY, INC.
691 Tacony, Philadelphia 35, Pa.

DISSTON BRANCH WAREHOUSES: Charlotte, North Carolina, 3901 Highland Avenue, Telephone: Express 9-7325 • Chicago, Illinois, 111 N. Jefferson Street, Telephone: Franklin 2-0860 • Los Angeles, California, 403 E. Washington Boulevard, Telephone: Richmond 7-5621 • Seattle, Washington, 1555-65 Fourth Avenue, S., Telephone: Elliot 8040 • Toronto, Canada, 2-20 Fraser Avenue, Telephone: Lakeside 1139



A GOOD DOCTOR is operating here —

a Lodding Hydraulic Oscillating Doctor

no valve mechanism, fluid reservoir or pump required.

Banish the danger of scored rolls.

Be safe — specify LODDING.

LODDING ENGINEERING CORPORATION

WORCESTER • MASSACHUSETTS

POWELL RIVER UNBLEACHED SULPHITE PULP

★STRENGTH

★COLOR

★CLEANLINESS

★SERVICE

★DEPENDABLE SUPPLY

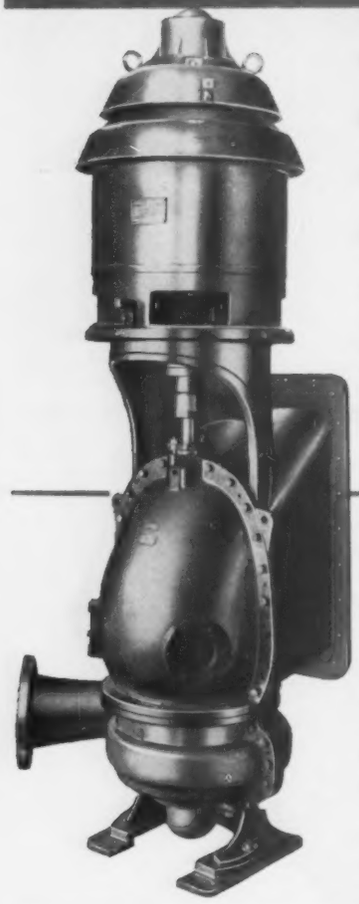
★ POWELL RIVER SALES COMPANY LIMITED
STANDARD BUILDING VANCOUVER, B. C.

THE

Bingham "PULP HOG"

FOR DECKER, WASHER OR THICKENER

A STOCK PUMP THAT CANNOT BE AIR-BOUND!



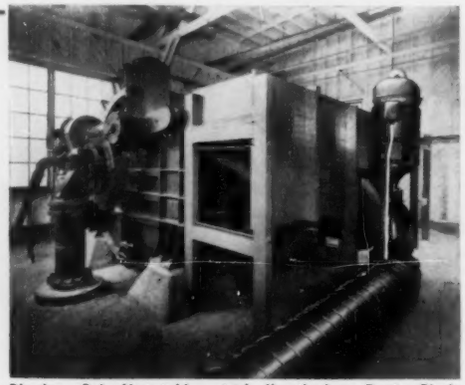
- **HANDLES AIR-ENTRAINED PULP**
- **DISCHARGES PULP AT CONSTANT RATE**
- **UNINTERRUPTED FLOW INCREASES PRODUCTION**
- **RELIABLE PERFORMANCE UNDER ALL CONDITIONS**

The *patented* Bingham Pulp Hog has been developed particularly for pumping stock containing large volumes of entrained air. This specially-designed pump takes stock from the doctor blades of Deckers, Washers, and Thickeners, and pumps it — without becoming air-bound or clogged — directly into mill system.

The Bingham Pulp Hog is characterized by a *large suction opening* and *non-clogging impeller of the top suction type. Impellers are specially designed to efficiently handle both high and low consistency stock.*

Bingham Pulp Hogs have records of *dependable performance* in major pulp and paper mills throughout the world. For more information call your nearest Bingham office or write for Bulletin No. 26.

- **Permits installation at convenient locations in mill flow line.**
- **Permits use of available floor space regardless of location of storage chest or other equipment.**
- **Operates successfully in basements or on any floor level.**
- **Eliminates need for dump chests.**
- **Substantially reduces building costs.**
- **Reduces operating heads, resulting in power savings.**



Bingham Pulp Hog taking stock directly from Doctor Blade of Washer. Weyerhaeuser Pulp Mill, Everett, Washington.

Bingham SINCE 1921

DOUBLE VOLUTE PUMPS RADIAL BALANCE

BINGHAM PUMP COMPANY

General Offices: **2800 N.W. Front Avenue, Portland 10, Oregon**

Factories: **Portland, Ore. • Vancouver, B.C., Canada**

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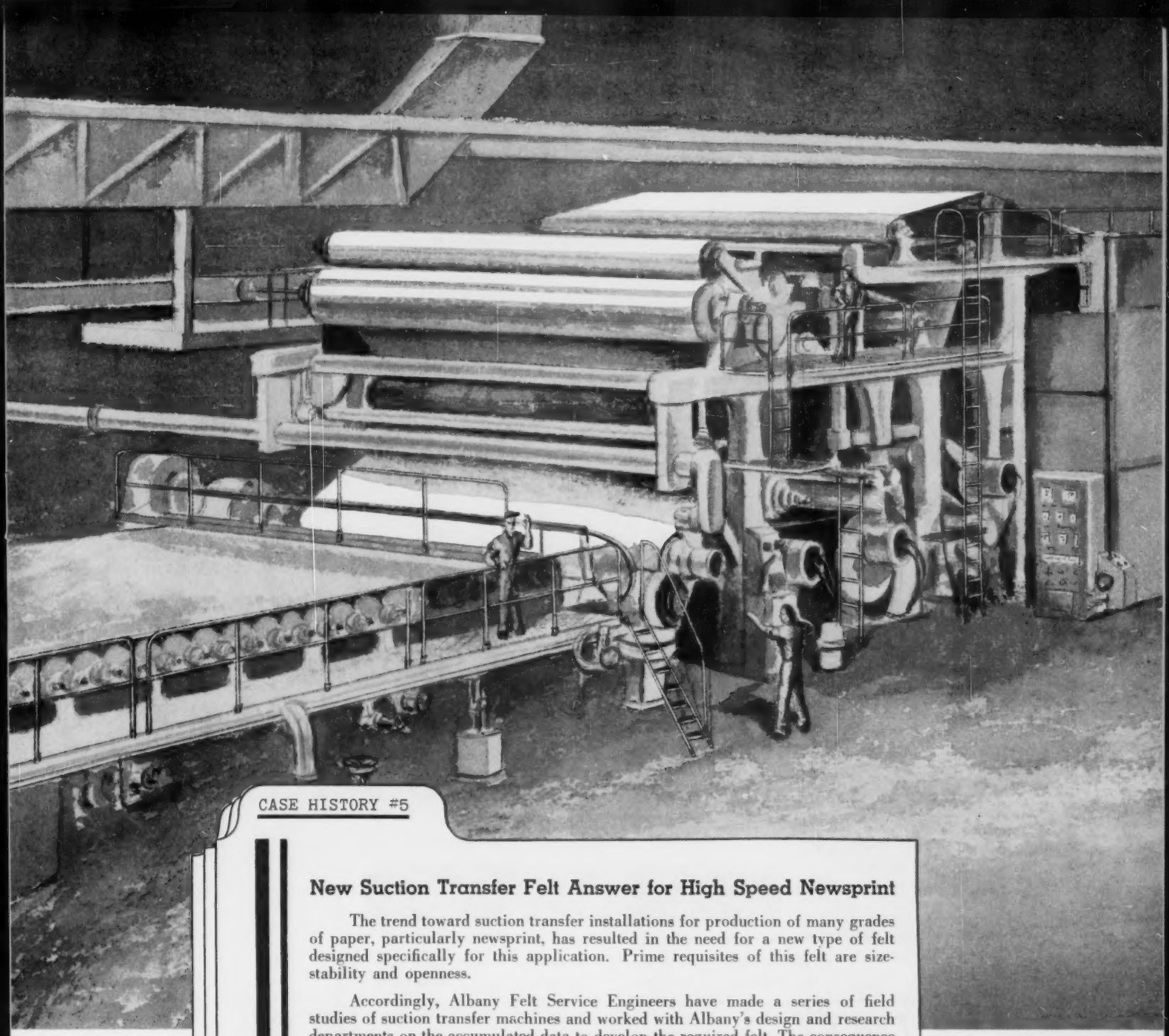


CASE HISTORY #5

New Suction Transfer Felt Answer for High Speed Newsprint

The trend toward suction transfer installations for production of many grades of paper, particularly newsprint, has resulted in the need for a new type of felt designed specifically for this application. Prime requisites of this felt are size-stability and openness.

Accordingly, Albany Felt Service Engineers have made a series of field studies of suction transfer machines and worked with Albany's design and research departments on the accumulated data to develop the required felt. The consequence of this effort is a new suction transfer felt featuring a special weave for size-stability, small synthetic content to give additional protection against frictional wear, and J-3 treatment to assure good openness.

RESULTS: The initial run of this new felt on a suction transfer newsprint machine designed for speeds to 2,000 ft. per minute showed excellent drainage and stability and a felt life which exceeded that of felts previously used by 28%.

For improved felt performance on your machines, call in your Albany Felt Sales Engineer. His analysis of your problems, together with the efforts of the industry's top team of Service Engineers, Designers, Research and Laboratory Specialists, will bring you the famous "blue line" felts you need to help produce *more saleable tons per day!*

ALBANY FELT COMPANY

"THE WORLD'S LARGEST MANUFACTURER OF PAPER MACHINE FELTS"

Main Office & Plant, Albany, N.Y. Other plants: Hoosick Falls, N.Y., N. Monmouth, Me., St. Stephen, S. C., Cowansville, P.Q.

THIS

Mettler PRECISION BALANCE

+

THE NEW TARING DEVICE

=

GREATEST EASE, SPEED AND PRECISION!

12 TO 20 WEIGHINGS PER MINUTE

TYPE NO.	CAPACITY	PRECISION	TARING RANGE
K-4	4000 g	± 0.3 g	500 g
K-5	2000 g	± 0.2 g	500 g
K-7	800 g	± 0.03 g	100 g

Write us today for our new booklet describing the precision balances. Ask us to arrange for a demonstration in your laboratory.

Mettler

INSTRUMENT CORPORATION

BOX 242, HIGHTSTOWN, N. J.

New plant doubles production of Glidden Zopaque Titanium Dioxide

Here's an up-in-the-air view of the new multi-million-dollar Adrian Joyce Works, Baltimore, Maryland. This modern titanium dioxide processing plant represents the first step in a broad expansion program designed to provide better service for the many users of Glidden ZOPAQUE Titanium Dioxide.

Glidden ZOPAQUE Titanium Dioxide is the finest, whitest white pigment available for use in rubber, plastics, paint, paper, ceramics and other products.

Glidden research has achieved greater whiteness and an accelerated dispersion rate in new ZOPAQUE. These developments combine to produce pigments with outstanding gloss and color retention as well as low reactivity.

Chances are Glidden ZOPAQUE Titanium Dioxide can help you give greater whiteness to the white products you manufacture. Available in both Rutile and Anatase grades. Write today for complete information.

THE GLIDDEN COMPANY

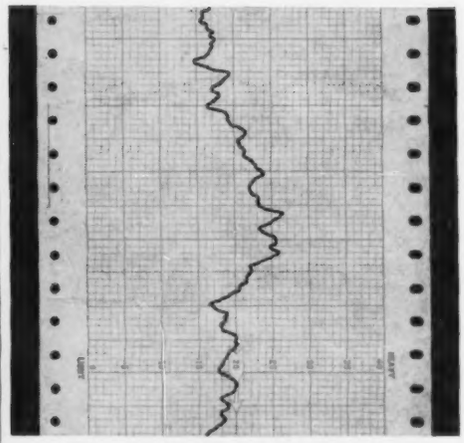
Chemicals—Pigments—Metals Division

Baltimore, Maryland • Collinsville, Illinois • Hammond, Indiana • Scranton, Pa.

Fast...Accurate...Inch-by-Inch Weight Record

Across the Sheet

A single unit can serve 6 or more machines. Can be located anywhere. Strip torn from the reel is fed through measuring slot automatically. Charts serve as instant guide to slice adjustment and, after adjustment, as permanent proof of sheet weight uniformity.



with new FOXBORO SHEET WEIGHT PROFILER

This new Foxboro development gives a *true profile* of weight variations *straight across the sheet* — no confusion with variables in the machine direction. Its *wide* open chart record (each inch represents 10" of paper) makes it easy to identify and correct faulty slice adjustments.

Mill after mill is realizing major gains in paper quality through the use of the Foxboro Sheet Weight Profiler . . . a basic production tool which has never before been available. Send today for new literature: Bulletin PD-105-2 describes the Sheet Weight Profiler; Bulletin PD-108 describes Foxboro measurement and control of the entirely independent basis weight variable in the machine direction.

Among the scores of prominent users

American Box Board Co.
American Writing Paper Corp.
Blandin Paper Co.
Brown Co.
Byron Weston Co.
Consolidated Water Power & Paper Co.
Chillicothe Paper Co.
Fitchburg Paper Co.
P. H. Glatfelter Co.
W. C. Hamilton & Sons, Inc.
Hammermill Paper Co.
Hollingsworth & Whitney Div., Scott Paper Co.
Howard Smith Paper Mills, Ltd. (2 mills)
International Paper Co. (2 mills)
Kalamazoo Vegetable Parchment Co.
The Mead Corp.
National Container Corp. of Wis.
Nekoosa-Edwards Paper Co., Inc.
Nicolet Paper Corp.
Oxford Paper Co.
Paterson Parchment Paper Co.
Quebec North Shore Paper Co.
Rhinelander Paper Co.
Riegel Paper Corp.
Schmidt & Ault Paper Co.
Simpson Paper Co.
Peter J. Schweitzer Inc. (2 mills)
Union Bag & Paper Corp.
Watervliet Paper Co.
West Virginia Pulp & Paper Co. (2 mills)

THE FOXBORO COMPANY, 996 NEPONSET AVENUE, FOXBORO, MASSACHUSETTS, U.S.A.

FOXBORO
REG. U. S. PAT. OFF.

BETA-RAY SHEET WEIGHT PROFILER

FACTORIES IN THE UNITED STATES, CANADA, AND ENGLAND

THIS MAN SERVES MANY MASTERS

WHO IS HE? He's a Buckeye Customer Service man—paid by Buckeye to help you, our customers, get the most from cellulose. Familiar with every phase of cellulose chemistry, he is equipped to work closely with your technical people . . . is always available to see that there is a Buckeye cellulose that meets your requirements *exactly*.

And Buckeye Customer Service is backed up by Buckeye Research —extensive laboratories . . . specialized testing equipment . . . pilot plants that simulate actual production conditions. Teamwork between customers and Buckeye has resulted—and will continue to result in—new developments, new uses for cellulose!

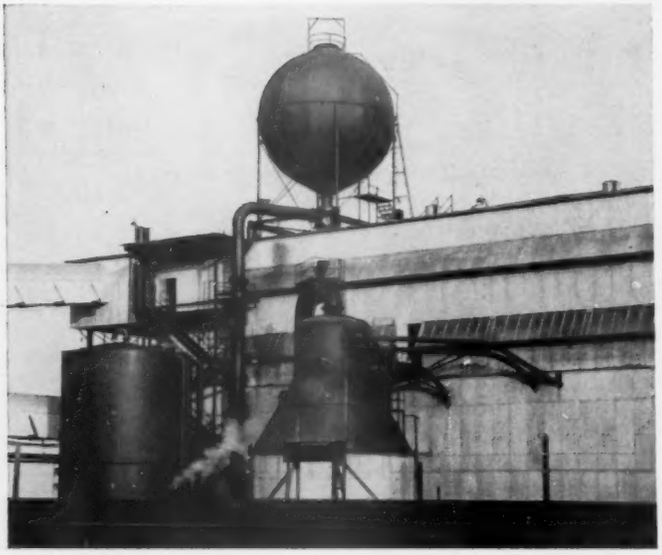
BUCKEYE

Buckeye Cellulose Corporation, Memphis 8, Tenn.

AT WEYERHAEUSER'S EVERETT MILL:

ERKOTE® Mastics

seal out corrosion on this unique gas collector system



Heavy spray coating of Erkote 2X Corrosion Resisting Mastic protects the sphere, tank and piping from corrosive action

To keep digester odors to a minimum in their Kraft mill at Everett, Washington, the Weyerhaeuser Timber Company has installed an unusual gas collector system. Non-condensible gases are collected under a diaphragm in the 10,000 cubic foot accumulator sphere and drawn off to be oxidized by waste waters from the bleach plant chlorination washers.

Protecting the exterior metal surfaces of the accumulator sphere, connecting piping and other vital operating equipment against the corrosive atmosphere was essential. A heavy spray coating of Erkote 2X Corrosion Resisting Mastic was applied to all surfaces to provide lasting protection.

50,000 cu. ft. water tower protected against corrosion with Erkote 2X Mastic.

Erkote 3X Insulating Mastic applied to caustic storage tank provides efficient, low-cost insulation.

A dependable surface coating that lasts for years

In pulp and paper mills, in chemical plants, in any industry where metal structures are exposed to corrosive action, Erkote Mastics provide a reliable protective coating. They are applied in one seamless application that bonds firmly to practically any surface, and they will not peel off or chip off under the most severe climatic conditions.

Complete responsibility for products and workmanship

We manufacture our own mastic products, and we furnish our own experienced crews to apply them. When you select Erkote Mastics to waterproof, weatherproof or insulate, you can depend on our undivided responsibility for the quality of the products and the application.

Northwest Representative
Harold Rogge 5704 E. 60th St. Seattle 15, Wash.

Midwest Representative
L. J. VanHalanger 5520 South Shore Drive Chicago 37, Ill.

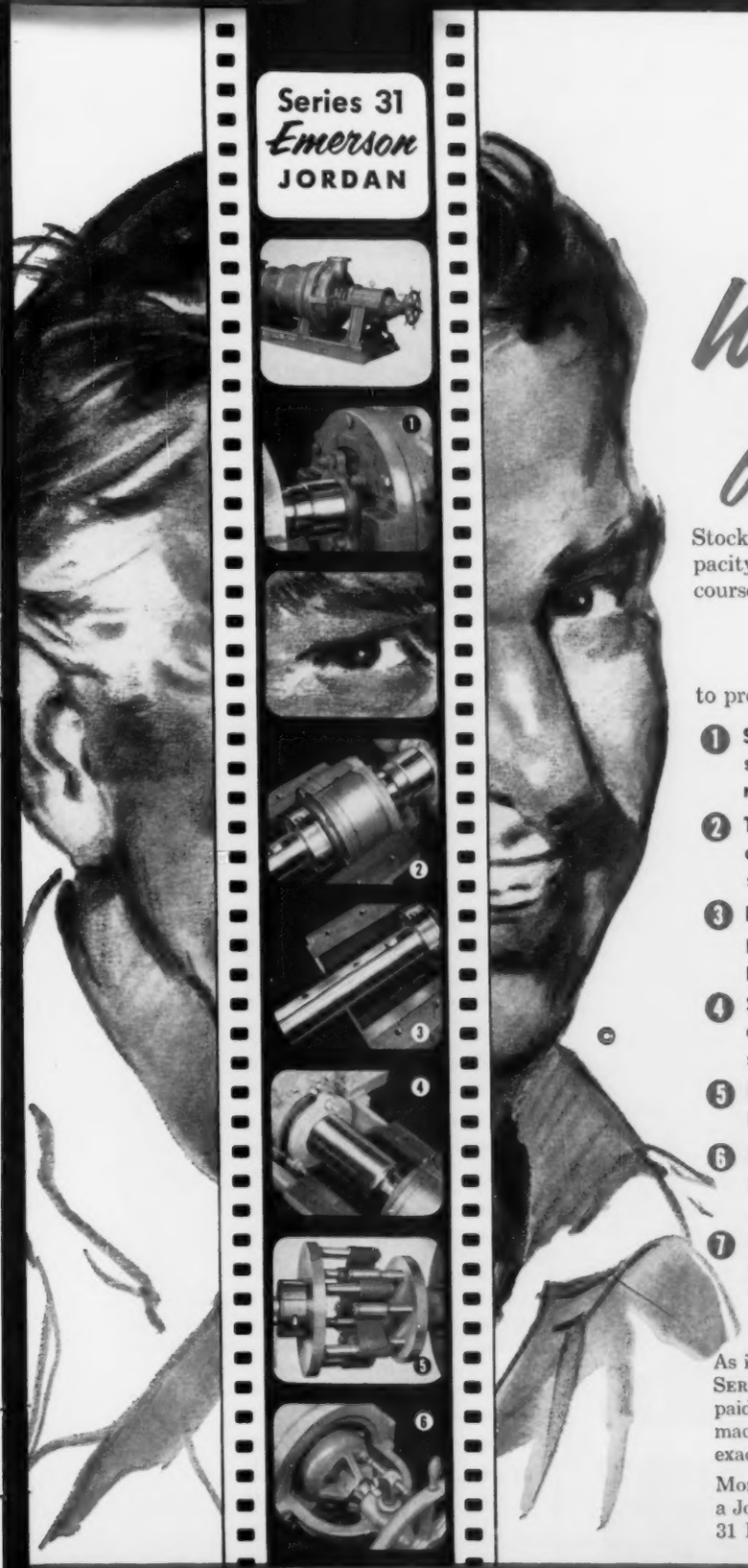
Southern Representative
W. W. Henderson and Sons P.O. Box 1085 Pensacola, Fla.

ERKOTE®

TECHNICAL MASTICS

For use where paints fail

EARL PAINT CORPORATION • 240 Genesee Street • Utica, N. Y.



What do You look for in a Jordan?

Stock preparation effectiveness, sturdy construction, high capacity, low horsepower consumption, speed and strength, of course. There are more advantages in the design of the new

Series 31 Emerson

to provide you with more efficient, economical refining.

1. **SPLIT HEAD (large and small) — constructed in two sections to permit withdrawal of the plug without removing bearings from the shaft.**
2. **TIMKEN BEARINGS — two anti-friction roller bearings completely encased in both the radial and thrust assemblies with fittings for oil lubrication.**
3. **HAMMERED STEEL SHAFT — annealed, turned and pressed into the plug body under 60-ton hydraulic pressure.**
4. **SEAMLESS BRASS SLEEVES — shrunk on the shaft and extending from the plug through packing boxes on both shell heads.**
5. **FAST'S TYPE COUPLING — standard equipment or Emerson Safety Pin Type Coupling if preferred.**
6. **PLUG ADJUSTMENT — for precision control, fine threaded lead screw with dial showing graduations of .01" lateral movement and locking device.**
7. **BOLTON FILLINGS — Plug knives supported their entire length in steel plug or stainless jacket and Hydro Truss shell fillings for best performance, durability and ease of changing.**

As in all nine EMERSON JORDANS, the SERIES 31 is designed with particular care paid to ease of maintenance. Precision machining of all parts guarantees their exact fit.

More information on what you look for in a Jordan is contained in the new SERIES 31 Bulletin. Send for your copy today.

BOLTON EMERSON

THE EMERSON MANUFACTURING COMPANY, DIVISION

John W. BOLTON & Sons, Inc.

Lawrence, Massachusetts, U. S. A.

Canadian Representatives: PULP AND PAPER MILL ACCESSORIES, LTD., Montreal, P. Q.
Foreign Representatives: UNITED STATES MACHINERY CO., INC., 90 Broad Street, New York 4, N. Y.

BRIEFS
for caustic soda buyers

New booklet
Barge delivery
Flake sizes
Drum styles

Useful facts on buying caustic soda are at your fingertips in this new pocket-size booklet.

Title: *Caustic Soda Buyer's Guide.*

Contents include a list of reasons *pro* and *con* switching from 50% to 73% liquid caustic.

There's a factual discussion of the comparative economics of both strengths, including a handy nomograph to help you figure which strength is your better buy.

The booklet also contains a nomograph that helps you estimate your liquid caustic requirements for various process solutions.

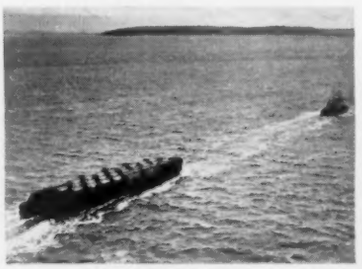
There's information on solid and flake caustic, too. Two tables show at a glance the dimensions and capacities of the many containers in which you can buy Hooker caustic soda.

Finally, there's a list of important points to consider when you're looking for a caustic soda supplier.

Check the coupon at right for a copy. Or write us if you'd like more than one.

Can you save buying by barge?

If you use large tonnages of 50% liquid caustic soda, and can receive by



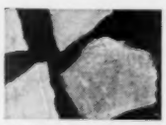
water, you may cut freight and handling costs substantially with barge service.

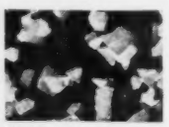
All Hooker plants and caustic terminals offer barge service as well as tank car service, since all are located on deep water.

If you think there's a possible saving here, one of our representatives will be glad to discuss barge delivery with you.

Which flake size? It's easy to be sure of the best possible caustic soda flake size for your process, when you buy Hooker caustic.

You have your choice of the four sizes here—all shown actual size.


REGULAR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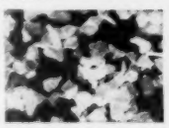
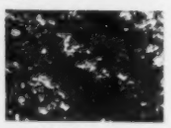

CRYSTAL


POWDERED

Regular, fine, and *crystal* flake are non-dusting—carefully screened for uniformity. We're extra-fussy about flake *thickness,* too. These flakes are hefty enough to take the jolts and jouncing of transit, and still reach you at full size. Yet they're thin enough to dissolve quickly when you're ready to put them to work.

For advice on the best flake size for your needs, write us, outlining the intended use.

Which drum style? You can order Hooker flake caustic soda in either of two drum styles.

The widely-used 400-pound drum shown above has a 14-inch opening that makes emptying safe and easy. The lid clamps on tight to protect contents in transit and storage.

Or you may prefer the full-open-head drum (not shown here). It gives you extra convenience in handling, and you can re-use the drum for many purposes. It costs a bit more than the 14-inch-opening drum.

Check items you'd like to receive:

- ☐ *Caustic Soda Buyer's Guide*

Technical data on:

- ☐ 50% Liquid Caustic Soda
- ☐ 73% Liquid Caustic Soda
- ☐ Flake Caustic Soda

For information on these other Hooker chemicals used in the pulp and paper industry, check below:

- ☐ Muriatic Acid
- ☐ Sodium Sulfide
- ☐ Sodium Sulfhydrate

Clip and mail to us with your name, title, company address.

HOOKER CHEMICALS & PLASTICS

HOOKER ELECTROCHEMICAL COMPANY

1906 FORTY-SEVENTH STREET, NIAGARA FALLS, N. Y.

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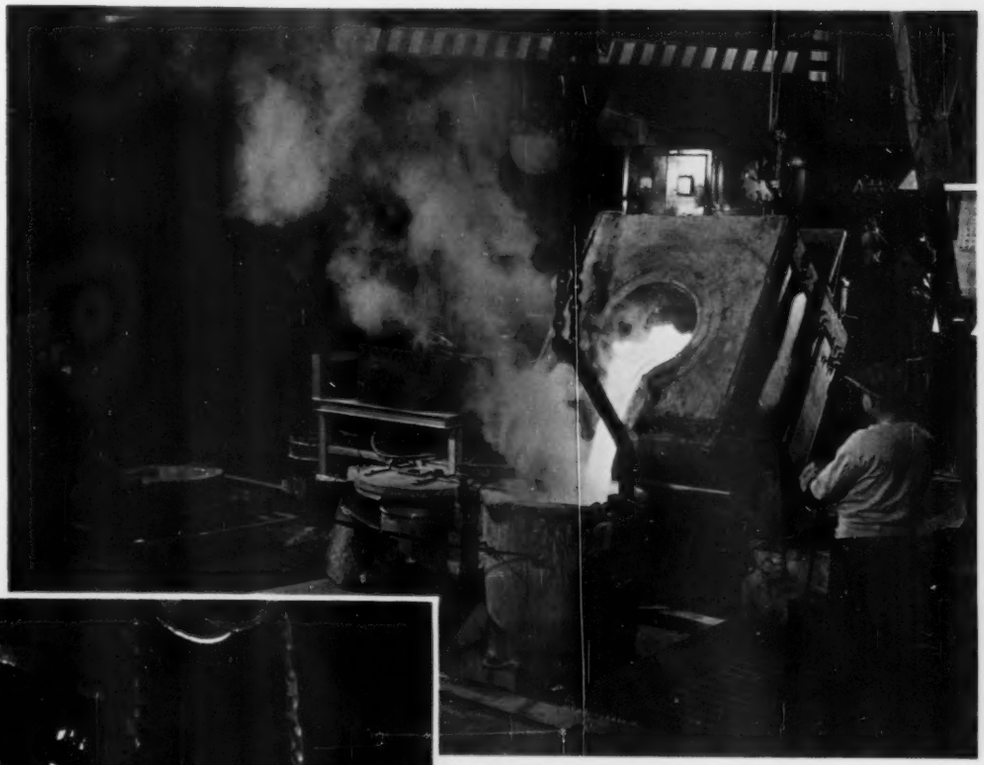


Basic steps in the production of quality knives as photographed in Heppenstall's Pittsburgh works, (right) pouring a heat of electric induction steel from one of the melting furnaces and (below) forging a large alloy steel ingot on an 1800-ton hydraulic press.

QUALITY COSTS NO MORE...

when you use *rugged* HEPPENSTALL Chipper Knives to increase pulp production

Over the years, Heppenstall quality has been achieved by painstaking research and development programs. Our durable, long-lasting, chipper knives are completely Heppenstall-built—from the patented analysis alloy steel to the final polished blade.

As the pioneer and one of the world's largest producers of alloy steel knives, we were the first to utilize high-frequency electric induction furnaces for the production of carbon and alloy forging steels.

Leading pulp producers using Heppenstall Chipper Knives are today securing such important production advantages as:

- **More cuts per knife grind**
- **Fewer oversized chips**
- **Decreased down time**
- **Lower over-all blade cost**

These knives are scientifically hardened to hold a keen edge, yet possess the proper ductility to resist breakage from production impact strains.

Make Heppenstall Your Standard Chipper Knife Specification

Heppenstall

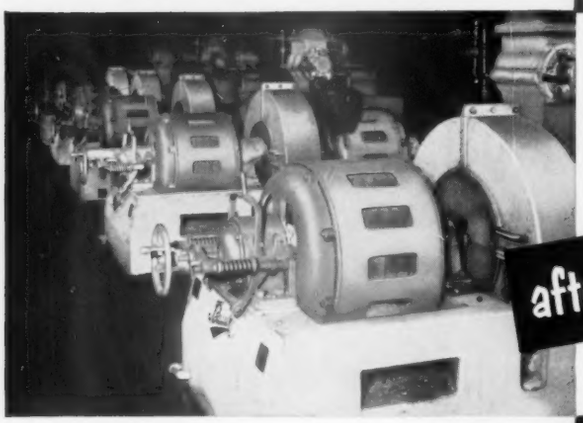
The most dependable name in forgings

PITTSBURGH 1, PENNSYLVANIA

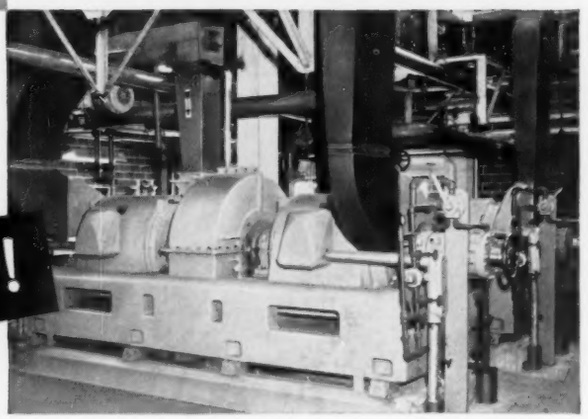
Sales offices in principal cities

The Rapid Trend Toward
Bauer Double-Disc Refiners for Semi-Chemical Pulp

one mill . . .



after another . . .



after another!

To get the best job of fiberization, high speed is right. And a Bauer Double Revolving Disc Refiner has it—2400 differential rpm between the rotating heads. Bauer double-disc refiners have no stationary plate to cut fibers. A Bauer will produce high quality semi-chemical pulp with less chop, better testing qualities, and better formation on the machine.

We're not prejudiced toward double-disc either, because we make the best and most modern pressure and free discharge single-disc mills offered to the industry.

Write, wire, or phone us for more detailed information on Bauer Refiners.

Bauer

THE BAUER BROS. COMPANY

DISC REFINER HEADQUARTERS

1714 Sheridan Ave. • Springfield, Ohio

STRICTLY PERSONAL

Notes from Northeast

SAMUEL KIPNIS, president, National Container Corp., reports the election of four new vice presidents, former execs. of Seaboard Container Corp., acquired by NCC: **YALE MANN** and **DAVID H. BLATT,** general manager and sales manager, respectively, Bristol, Pa., plant; and **IRVING LEVINE** and **FRANK L. BERNSTEIN,** general manager and sales manager, respectively of the Newark, N.J. plant. . . . **WILLIAM H. MOREA** is new plant manager at National Gypsum Co.'s Newburgh, N.Y. plant. Born in Jackson, Mich., he is a grad of U. of Michigan.

GRANT P. STINCHFIELD, former director of sales for Doeskin Products, Inc., is now vice president in charge of sales and **RAYMOND F. MARCUS,** former merchandise manager, has been upped to vice president and administrative assistant to **EMANUAL KATZ,** president. . . . **JOHN A. McQUADE,** formerly with Kellogg Sales Co., has joined Doeskin as general sales mgr. . . . **ORBBIE K. WEBBER,** former personnel mgr. and branch head instructor of St. Regis' Toledo, Ohio bag plant, is now assistant personnel mgr. and safety director at its Deferiet, N.Y. mill. He is married and has two sons and will live in either Carthage or Watertown. . . . **MELVIN H. BAKER,** National Gypsum chairman, reports that **LEWIS R. SANDERSON,** president, has retired. **FRED A. MANSKE,** formerly exec. v.p., is now president. . . . **JOHN DOHERTY,** Union Bag & Paper Corp., is new chairman of Metropolitan section of Empire State division of TAPPI. **ED HUDSON,** Lowe Paper Co., is vice chairman; **WARREN KUMBLAD,** Socony Mobil, is secretary-treas. and **WARREN BEEMAN,** also of Socony, is member at large. . . . **DR. GEORGE McCOY** is now manager of Pennsylvania Salt Mfg. Co.'s research and development dept. This native Philadelphian, attended U. of Pennsylvania, from which he has a doctorate. **LINWOOD W. ELLIOTT,** 75, senior field engineer, Lobdell Div. of United Engineering and Foundry Co., had a heart attack while visiting a Texas paper mill and died. . . . **ARVIN W. HARRINGTON** is new eastern general mgr. for Carpenter Tube div., succeeding **PAUL E. KELLY,** promoted to assistant manager of sales.

DR. GEORGE A. DAY, director of research, Brown Co., now holds new post of technical director. **DR. PAUL M. GOODLOE,** director of quality and process control, becomes assistant tech. director;

Jim Madden Moves to Chester

JAMES L. MADDEN has moved from his native Boston to Chester, Pa., in his capacity as Vice President of Scott Paper Co. Chester is Scott headquarters. Mr. Madden was President of Hollingsworth & Whitney Co. at the time of its stock exchange merger into Scott, having succeeded his father as head of H&W. He served in various capacities with H&W since graduation from Harvard. During World War II, he teamed with Ben Cancell, Pres. of Rhinelander, in spearheading a nationwide drive for more production of pulpwood and he has had a leading role in overall forestry policies in this industry. He was former Pres. of American Forest Products Industries, Inc.

DOUGLAS H. McMURTRIE, becomes director of research; **R. A. WEBBER** is now assistant director of research; **B. G. HOOS,** assistant to Mr. McMurtrie, is now research associate in pulp. Dr. Day, a native of Guelph, Ont., joined Brown in 1926 at its LaTuque, Que., plant (sold to Canadian IP) and came to Berlin in 1939, was named director of research in 1944. He received his ch.e. from U. of Toronto. Dr. Goodloe joined Brown in 1946; was named assistant director of research in 1953 and director of quality and process control in 1955. He's from Madison County, Ky., attended U. of Kentucky and East Kentucky Teachers College, receiving his bachelor in chemistry and doctorate from Johns Hopkins U.

QUENTIN C. WEAVER, brand coordinator in staff technical service dept., Scott Paper Co., Chester, Pa., has completed the management problems for executives course at School of Business Administration of U. of Pittsburgh. . . . **EDWARD A. WODKA,** formerly with Paterson Parchment, is now technical director, Hooper Paper Co., Reading, Pa. . . . **DONALD M. FERGUSON** is now special assistant to the general supt., St. Regis, Deferiet, N.Y. . . . **WILLIAM D. RICE** is now research director of P. H. Glatfelter Co.

EDGAR L. BOECK has been appointed pulp sales rep for U.S. market for domestic and imported pulps for Gaillet & Hartig Co., Inc., according to **OLAF NIELSEN, JR.,** vice president. . . . **JOHN STORY WRIGHT** and **ROSCOE C. INGALLS** are new directors of Riegel Paper Corp., according to **JOHN L. RIEGEL,** chairman of the board. . . . **EDWARD F. FLETCHER** has retired as purchasing agent of Hammermill Paper Company, Erie, Pa. He has been succeeded by **HERMAN C. WEBER,** former assistant purchasing agent. Mr. Weber has, in turn, been succeeded by **ROGER G. STURTEVANT.**

Southern Sidelights

Salesmen who find themselves traveling through Florida "in the season" might explain away some of those astronomical expense accounts by repeating the phrase on a sign noticed by a forester in the window of Daytona restaurant: "Keep Florida green . . . bring your money" . . . **ED STOUT,** Bowaters' new public relations director, reports that the Calhoun mill has handled its millionth cord of wood. And that, according to Bowaters woodlands manager **R. R. EDGAR,** represents 21 million trees! . . . **M. H. COLLET,** who was president of West Virginia Pulp and Paper Co.'s Brazilian subsidiary, Rigesa S. A., has been appointed to the new position of transportation and procurement manager of Olin Mathieson Chemical Corp.'s Forest Products Div. He is at West Monroe, La.

RAYMOND J. LEE, pres. of Lockport Felt Co., joined other company officials in the official dedication of Lockport Felt's new Starkville, Miss., plant recently. Mr. Lee announced that **GEORGE W. HARDAKER,** Southern rep for Lockport for several years, will now be Southern Division sales and service manager. **E. PAUL EASTON,** sales rep for Miss., Tenn., Ark. and adjacent South Central states, will be associated with him as well as **ALBERT HARDAKER,** G. W.'s son . . . Pollution control methods pioneered at Southland Paper Mills in Lufkin, Tex., were described to a Texas legislative committee recently by **WALTER L. McHALE,** vice pres. and gen. mgr.

G. J. BIENVENU, general supt. of converting plants for Gaylord at Bogalusa, temporarily is assigned to the St. Louis general office of the production converting division and **M. L. BELTON,** asst. supt., of the Gaylord box plant at Bogalusa, will temporarily take over some of the gen. supt's duties there. **FREDERICK L. BAUER,** is the new supt. at Gaylord's Beaver Falls., Pa., box

factory. He was formerly with Union Bag in Chicago . . . **C. D. HAMAKER, JR.**, former mill agent of the Mobile and Springhill International Paper Co. mills, has been named agent for Bastrop and Louisiana mills succeeding **JAMES EARL WILLIS**, who died in March following a heart attack. Mr. Willis, a native of nearby Crossett, Ark., has been with IP for 24 years.

EDWIN R. STEVENS, industrial relations supervisor of Buckeye Cellulose Corp.'s Memphis, Tenn., pulp mill deserves congratulations. He won the first annual James H. Williamson Award for "industrial personnel management" given by the Tennessee Industrial Personnel Conference . . . **J. V. MARTIN**, formerly with the research dept. of the Marathon Corp. at Rothschild, Wis., has joined the timberlands staff of Marathon Southern at Meridian, Miss. . . . **DR. DAVID C. LEA**, former tech. dir. at Potlatch Forests, Inc., has taken over as research and development director for the Forest Products Div. of the Olin Mathieson Chemical Corp. at West Monroe, La.

FRANK PARKER, former Davis Cup champion, put aside his duties as a sales rep for Olin Mathieson's Frostkraft containers in Chicago long enough to pick up his racket again and play in the recent professional tennis championships at Cleveland, Ohio. Frank was paired against Frank Kovaks in the tourney . . . **KIRK SUTLIVE**, Union Bag's peripatetic public relations director, was gifted with a nickel-plated skillet by the Georgia State Chamber of Commerce for moderating at its annual "Eggs and Issues" breakfast in Atlanta, Ga. Some 250 legislators and businessmen took part in the get-together. Skillet was inscribed: "Kirk Sutlive, World's Champion Chief Cook and Moderator, Eggs and Issues Breakfast."

JOHN CHANDLER now is also representing Vapo Systems Co. of Villa Park, Ill. This line of equipment is designed to "moisturize" paper.

DR. MALCOLM L. TAYLOR, manager of technical division, Savannah plant, Union Bag & Paper Corp., has been promoted to technical director of the company, with offices in New York City. **T. T. DUNN**, executive vice president in charge of manufacturing, announced that **J. R. LIENTZ** has assumed position of resident manager of the Savannah plant. Formerly in charge of Savannah operations, Mr. Dunn will move his offices to New York City within a month . . . **DR. G. C. KIMBLE**, asst. manager of technical div., succeeds Mr. Taylor as manager, and **W. C. CHAPMAN**, supt. of mill technical, became asst. manager of technical div. **R. R. CHASE**, asst. supt. mill technical, has been promoted to supt. of mill technical, and **HORACE ROBSON**, group leader in mill technical, replaced Mr. Chase, as asst. supt. of mill technical.

F. N. JOHNSTON CO., New Orleans, representatives of Reliance Electric & Engineering Co., Dodge Mfg., Union Chain, and Philadelphia Gear, have opened an office at 626 Ricau (Brewster Bldg.) in Shreveport, La., according to **BILL JOHNSTON. HAROLD A. SUMRALL** is in charge at Shreveport. Bill Johnston says the company is celebrating its 25th anniversary. Shreveport serves paper mills in south Arkansas, north and west Louisiana.

Midwest Medley

TOM G. FLETCHER, president of Fletcher Paper Co., Alpena, Mich., was making a tour of Europe in May and June. His father, **HARRY FLETCHER**, chairman of the board, and one of the "grand old men" of this industry and a founder of TAPPI, died in January. . . .

DON CHERRY, amateur golf headliner and paper salesman out of St. Louis, has turned crooner in a big way. He has received a gold record for selling one million records of his hit song "Band of Gold" and has followed this up with another sure hit, "Wild Cherry." . . . **GEORGE EASTIN**, technical director at Escanaba Paper Co., takes on additional duties as asst. supt., announces **G. S. DOUGLAS**, manager of the Escanaba, Mich., mill. Mr. Eastin went to Escanaba in 1952 from Mead's Kingsport, Tenn., mill. A native of Brownstown, Ind., he graduated from Purdue. He is a navy veteran of World War I and the Korean war, with rank of lieutenant.

HERBERT KRONHOLM has joined the Engineering Dept. Consolidated Water Power & Paper Co., announces **M. V. MOLSBERRY**, chief engineer of the company. Mr. Kronholm, a native of Wisconsin Rapids, was graduated from U. of Wisconsin with a B.S. degree in civil engineering in 1952. He has been employed by Chance Vought Aircraft, Dallas, Tex., and most recently by Refinery Engineering Co., Tulsa, Okla. . . . **KEITH S. CAMPBELL** has been promoted to secretary of Orchard Paper Co. He succeeds **LOUIS WEENICK**, recently retired. Mr. Campbell joined Orchard which now owns the Racquette River mill in N.Y., in 1948. In 1950 he was assigned to the managership of Orchard's midwest region with offices in Chicago. In 1954 he was named merchandise manager at the St. Louis plant.

Baumgarten to Ohio; Bob Elias to New York

HOWARD BAUMGARTEN (left), former Economist at Institute of Paper Chemistry, Appleton, Wis., and more recently Economist for Parsons & Whitemore Co., has joined Gardner Board & Carton Co., Middletown, O. ROBERT T. ELIAS (right) is new Tech. Dir. of Racquette River Paper Co., Potsdam, N.Y., now a division of Orchard Paper Co. of St. Louis. Mr. Elias was Assoc. Prof. in the Paper Technology Dept., Western Michigan College, and prior to that was in the Wisconsin industry.

HAROLD E. BRAKEWOOD is new assistant division mgr. of American Coating Mills at Elkhart, Ind., a division of Robt. Gair Co. Inc. . . . **WILLIAM DESKINS** is maintenance engineer and master mechanic at The Fox Paper Co., Lockland, O. He went there from St. Joe Paper Co. in Florida. . . . **THOMAS ELMBLAD** has joined Swenson Evaporator Co. staff at Chicago headquarters under Mgr. **RALPH BERGSTROM.** Mr. Elmblad was in New York for Swenson.

The Chicago sales staff of Nekoosa-Edwards Paper Co. has taken over new quarters on the 19th floor of the new Prudential Building, Chicago. Representatives are: **C. A. HODLMAIR**, middle western sales manager; **L. J. LYONS**, southwestern sales manager; **W. E. NASH; R. L. GRESCH;** and **J. H. MANSKE.**

GEORGE BYRON ESTEY, 78, former supt. of the Fox Valley mill of Fox River Paper Corp. died May 1. He was with Fox River 49 years. . . . **C. F. RABER** is new vice president of American Box Board Co. A native of Grand Rapids, Mr. Raber started with American Box Board in 1931, following the completion of his business administration major at U. of Michigan.

WAYNE A. YOUNG has been elected chairman and chief executive officer of Ohio Boxboard Co., Rittman, O. Mr. Young has been president of Ohio Boxboard and Ohio Injector Co. since 1934. He succeeded his father, the late E. J. Young, who founded both companies . . . **DUDLEY W. MAXON**, former executive vice president and general manager, has been elected president and

chief administrative officer. Prior to joining the company in 1953, Maxon was a senior partner in an Akron law firm. **J. N. ANDREWS** has been elected executive vice president. He is a graduate of Wittenberg College and joined the company in 1936.

CLARENCE HEIDEMANN, grad of Valpariso U., has recently joined National Container Corp., Tomahawk, Wis., as staff engineer . . . **CARLTON W. "CHUCK" CLARK** is now dist. rep for National Starch, Inc., in Minn. and Wis. He's a Columbia grad and he, his wife and little daughter will live in Green Bay, Wis . . . **RALPH PRINCE,** now working for Huyck Felt in Miami Valley area, was formerly with Fort Orange Paper Co. . . . The office of Douglas Robbins & Co. has moved to Manooka, Ill., Box 12, RR#1, under direction of **HAL BOGNER. DOUG ROBBINS,** pres. and founder of the firm, is now retired.

RANDALL PRESTON has been appointed safety director of Allied Paper Mills, Kalamazoo, Mich., a division of Thor Corp. He was previously asst. personnel mgr. and safety dir. for Panelyte Div., St. Regis, Kalamazoo.

ROBERT L. WALLIS has joined Ahdawagam Div. of Consolidated Water Power & Paper Co. as plant engineer, it is announced by **FRANK R. WALSH,** division manager. Mr. Wallis, a native of Racine, Wis., was graduated from West Point with a b.s. in 1955. He has been employed by Western Electric Co., Chicago, as department chief.

Far West Flashes

LARRY WOODSIDE, from home office of Albany Felt Co., on one of his west coast mill tours, was sure surprised at a meeting he attended, when he found the wooden Indian from the hotel lobby in his canopy-covered bed. This was to "pay him back" for reciting "The Shooting of Dan McGrew." Larry traveled with **HARRY STILWELL,** veteran Coast rep, who is laying plans for retirement at his Hood Canal home on Olympic Peninsula. . . . **A. C. McCORRY,** new general supt. at Hinton, Alberta, mill of St. Regis-Canadian Oils, came down to the coast from his mountain post, and reports a bad winter slowed down construction and crews are hustling to make up for it. . . .

PAUL EYOLFSON, who has worked on much pulp mill engineering at Electric Steel Foundry Co., specializing in process equipment under **JACK WILCOX,** division mgr., has transferred to construction equipment division. Another former pulp industry veteran in that division is **JOE McQUAID,** who was former Esco mgr. in Seattle. . . . **BOB BAER,** formerly general sales manager of Griffith Rubber Mills, Portland, Ore., is making a 2-month industrial survey in California for Quaker Pioneer Rubber Mills, Pittsburg, Calif. division of H. K. Porter Co., Pittsburgh, Pa. . . .

BILL McKENZIE, resident engineer, Simpson Paper Co., Everett, Wash., and Mrs. McKenzie were in Palm Springs and Arizona this spring. **BUD LAUNTZ,** formerly superintendent of Crown's Western Waxed Paper Division Portland plant, has been named to newly created position of assistant to the manager. . . . Promotions at CZ Camas division: **ROBLEY BUTLER,** from manager of pulp production to asst. resident manager. . . . **CLARENCE P. BROWN,** supt. for wrapping papers, becomes general superintendent of paper production; **GUS LORENZ,** paper mill superintendent–tissue, steps up to paper mill superintendent–wrapping; **ED BARTHELEMY** becomes paper mill superintendent–tissue; **H. L. OSTENSON** to assistant paper mill superintendent–tissue. . . . Transferring to the new CZ mill being built at Antioch, Calif.: **CARL JOHNSON,** assistant supervisor of production planning supervisor; **S. M. PURDY,** formerly at Camas, to be paymaster. . . .

V. C. GAULT, general safety supervisor for Crown Z, retired May 1 after 40 years service with the organization.

HARRY L. HARNER is new Pacific Coast sales rep for Alloy Tube Div., Carpenter Steel Co., with headquarters in San Francisco. He succeeded **HARRY A. HAUSER,** who became Mideastern regional mgr. for the Division . . . **J. STEPHEN THURLOW** also is repping Vapo Systems Co., Villa Park, Ill., on the West Coast.

Crown Zellerbach changes: **WILLIAM F. CYPRUS,** West Linn chemist–group leader–production control, pulps–to technical assistant to the coated paper superintendent, West Linn. **ROBERT L. GAISER,** West Linn chemist–to chemist –group leader, new development, uncoated grades, West Linn. **JOHN W. TILDEN,** assistant purchasing supervisor, West Linn–to purchasing supervisor, Antioch (new mill in California), and **EDWIN D. FRAZER,** converting department foreman, San Leandro–to division industrial engineer, Antioch.

ROD TAFT, previously supervisor of potash sales, is being transferred from Los Angeles to San Francisco as district sales mgr. for American Potash & Chemical Corp., and **PAUL F. STAUB** has joined the company as Pacific Northwest district sales mgr., operating from Portland, Ore., announced **WM. M. CLINES,** Western sales mgr. Mr. Staub previously was district mgr. in Portland for **L. H.** Butcher Co. for 10 years, after 11 years with General Chemical.

Crown Z Executive-Management Promotions

(Left to right) PETER T. SINCLAIR, former Vice Pres. in charge of mfg., San Francisco Headquarters, transfers to Vancouver, B.C. as Pres. of Crown Zellerbach Canada Ltd. FRANK N. YOUNGMAN, former Pres. of CZ Canada, continues as Chairman of Board and Executive Committee. Mr. Sinclair was also elected Pres. of Elk Falls Co., Director and Board Chairman of Canadian Western Lumber Co., and a Director of CZ Canada; E. W. ERICKSON, Asst. Vice Pres. has been promoted to Vice Pres. for Mfg. and Construction. A graduate of U. of Michigan, he has been with Corwn since 1919 and had been a former Mgr. at Port Townsend mill; G. H. GALLAWAY, Res. Mgr. of CZ Camas, Wash. Division, becomes Asst. Vice Pres. for Mfg. and Converting, San Francisco; H. F. CARPENTER, Res. Mgr. of Crown's Port Angeles division, promoted to Mgr. of Printing Papers Production, San Francisco; F. O. BOYLON, promoted from Asst. Res. Mgr. to Res. Mgr. at Camas; F. W. FLYNN, Asst. Res. Mgr., becomes Res. Mgr. at Port Angeles; ROBLEY BUTLER, Mgr. of Pulp Production, Camas, becomes Asst. Res. Mgr. there; CLARENCE P. BROWN, Supt. for Wrapping Papers, advances to Gen. Supt. of Papers Production at Camas; VERTREES YOUNG, newly named Vice Pres. of CZ and Mgr. of Mill Operations of its Gaylord Container Div., with headquarters at Bogalusa, La. He started career as forester, was Exec. Vice Pres. of Gaylord before merger.

PULP & PAPER

STRICTLY PERSONAL

Changes at Port Angeles

CLAUDE P. KELLEY (left), one of North America's great newsprint makers, who recently retired as Paper Mill Supt. at Port Angeles, Wash., newsprint mill of Crown Zellerbach Corp., after 38 years with Crown, is now actively engaged as a consultant, for CZ and other organizations. Prior to his appointment as Supt. at Port Angeles in 1948, he had been Supt. at Powell River, B. C., plant. His first work with CZ was at Ocean Falls in 1917. He began his career with Brown Co. in New Hampshire in 1908 and worked for other eastern companies before moving west.

JOHN M. REINERS (middle) succeeds Mr. Kelley as Paper Mill Supt. at Port Angeles. He has been Day Shift Foreman in the Paper Machine Dept.

CLAUDE L. RIVETTS (right) succeeds Mr. Reiners as Day Shift Foreman. Mr. Reiners and Mr. Rivetts have both been at Port Angeles a number of years.

Column from Canada

RICHARD L. ELDERKIN has been transferred from Wayagamack Div., Consolidated Paper Corp., Ltd., where he has been mechanical engineer, to the chief engineer's department at Grandmere, Que. . . . **ROBERT H. R. YOUNG,** former vice president has been elected executive vice president and a director of Crown Z Canada and a vice president and director of Canadian Western, appointment providing broader responsibilities for Mr. Young with respect to all Crown Z operations in Canada. . . . **OTIS D. HALLIN,** vice president of CZC, was elected a director.

R. T. STEEDMAN, vice president and general manager of Marathon Paper Mills for several years, office in Toronto, has been made executive v.p. of Marathon Corp. of Canada. . . . **NELSON GREENLEAF** has been named administrative assistant to the president of Ontario Paper Co. at Thorold, Ont., and **KENNETH VOSS** is assistant general supt. At the Baie Comeau mill of the affiliated Quebec North Shore Paper Co., **PETER SUTTIE** is the new plant engineer, and **EMIL BODMER** has been promoted to maintenance engineer.

LEO KELLY, New Hampshire-born, has been appointed assistant paper mill supt. of Mersey Paper Co., Brooklyn, N.S., which he joined in 1929, after serving with Brown Corp. and other companies. . . . **F. X. GUIMOND,** formerly with Canadian International at Temiskaming, Que., has been named manager of pulp manufacturing for CIP in LaTuque. He was previously with CIP at Gatineau and Quebec North Shore at Baie Comeau.

J. A. YOUNG, with Pacific Mills and Crown Zellerbach in British Columbia for 34 years, latterly as senior vice president, has retired, although he continues as a director and consultant to the Vancouver head office of Crown Zellerbach Canada. He joined the company in 1922 at Ocean Falls and three years later was asst. mill manager there, subsequently going to Vancouver as treasurer and vice president. . . . **HOWARD GRAHAM,** technical supervisor at Elk Falls Co. newsprint mill at Duncan Bay, B.C., has been given additional duties as assistant to the paper mill supt. . . . **V. MacDONALD** is the new construction field engineer for Crown Zellerbach Canada at Ocean Falls, replacing **S. MOONEY,** now senior design engineer. **F. DUNCAN** has been appointed groundwood supt. at the same mill, succeeding **N. F. WARD,** who left the company.

PETER WILKIE, formerly of Crown Zellerbach's Camas division, has gone to Duncan Bay, B.C., to be supt. of the kraft mill under construction by Elk Falls, CZ subsidiary. . . . **GEORGE O'BRIEN,** senior v.p. of Powell River Co., largely responsible for the company's timber and logging policies, has retired, but continues on the board . . . **ED BARNES** has been named asst. technical supervisor at Elk Falls, where he will be associated with **HOWARD GRAHAM.** His former position was at Pacific Mills, Ocean Falls.

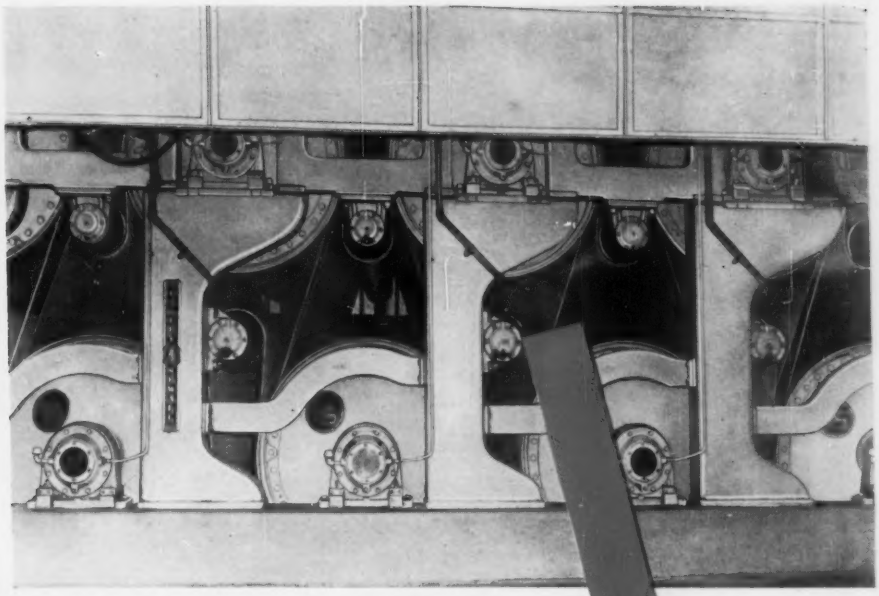
B. M. HOFFMEISTER, chairman of MacMillan & Bloedel, spent April in Europe on a combined vacation and business trip . . . **M. J. FOLEY,** president of Powell River Co., has been elected chairman of the British Columbia division, Canadian Manufacturers Assn. . . . **JOHN J. KILLIN,** B. Sc., for five years process and plant engineer with Great Lakes Paper Co., Fort William, Ont., and formerly with Anglo-Canadian Pulp & Paper Mills, has joined the sales division of Porritts & Spencer (Canada) Ltd., Hamilton, Ont. . . . Born in Ocean Falls, he is a son of **JOE KILLIN,** well known throughout the Canadian industry and for many years supt. at Anglo-Canadian Pulp & Paper Mills.

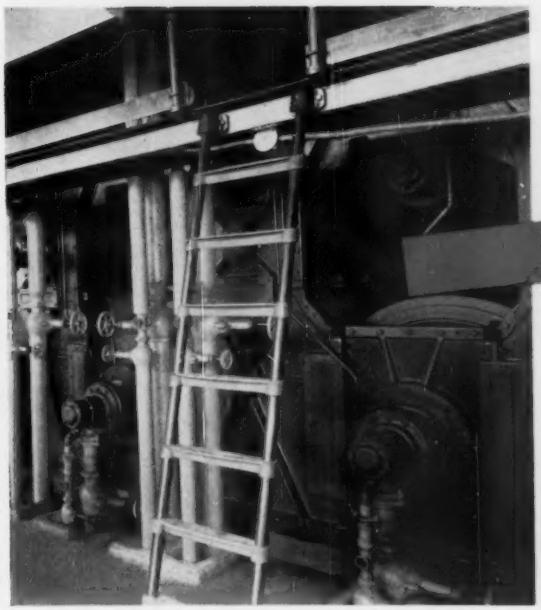
PETER VAKOMIES, assistant chief engineer of Sandwell & Co., Vancouver consulting engineers supervising projects in the industry on several continents, has returned from an extensive tour of European mills. . . . **E. HOWARD SMITH** has been elected chairman of the board Howard Smith Paper Mills, and **A. J. PHILIP** has joined the board. The latter is general manager of Canada Paper Co. and has been with the Howard Smith for 30 years, mostly at Windsor Mills. . . . **HAROLD MOOREHEAD,** chief engineer of Powell River Co., has been elected vice president in charge of engineering. **HAROLD A. RENWICK,** head of the company's wood products division, has also been made a vice president. . . . **HOWARD WRIGHT,** formerly with C. C. Moore & Co. in Vancouver, B.C., who left to become chief engineer of Alaska Pine & Cellulose, has resigned to enter the consulting field.

E. B. HINMAN, manager of newsprint mills in Canada for Canadian International Paper Co., Montreal, has been elected to board of directors, according to President **VERNON E. JOHNSON;** and **F. A. HARRISON** has been elected a vice president. Mr. Hinman was born in New Hampshire and is a graduate of Dartmouth and Harvard. He has been with CIP since 1936. Mr. Harrison is a New Brunswicker who succeeded Mr. Johnson as manager of woodlands ten years ago. . . . Former engineering classmates at U. of British Columbia have formed a consulting firm in Vancouver specializing in pulp and paper. Principals are **EDWARD A. ROBERTSON, HENRY KOLBEINS, JAMES T. TEEVAN** and **ERNEST E. GALLAGHER,** the last named for some years was chief structural designer for Weyerhaeuser Timber Co. The firm has been working on Powell River and Sidney Roofing & Paper Co. projects.

BILL BUTLER, administrative assistant to **DR. D. C. DORLAND** at Sault Ste. Marie, Ont., research laboratories of Abitibi Power & Paper Co., has been made vice president and general manager of Bauer Bros. (Canada) Ltd., in Brantford, Ont. Among the new men who have joined tthe Soo staff are **HERBERT ERICH SCHMIDT,** from Germany (also an accomplished pianist), and **RAY TOOLEY,** former engineer with Algoma Steel.

JOHN LIERSCH, vice president, Powell River Co., has been elected president of the Professional Engineers Assn. in British Columbia. . . . **JAMES H. LAWSON,** formerly secretary of Pacific Mills (Crown Zellerbach Canada) and of Powell River Co., died recently aged 80. . . . **A. A. SCHMON,** president of Ontario Paper Co., has been presented with an honorary membership in American Federation of Labor for his "fair and just approach to labor and employee problems."





a Black-Clawson design feature

"open window" dryer framing

This modern, functional front side framing designed by Black-Clawson provides an "open window" for excellent air circulation and maximum access to the up-traveling sheet.

It's easy and safe for operators to handle felts, felt rolls and doctors. The open construction enables the operator to blow out broke either to the front or back side.

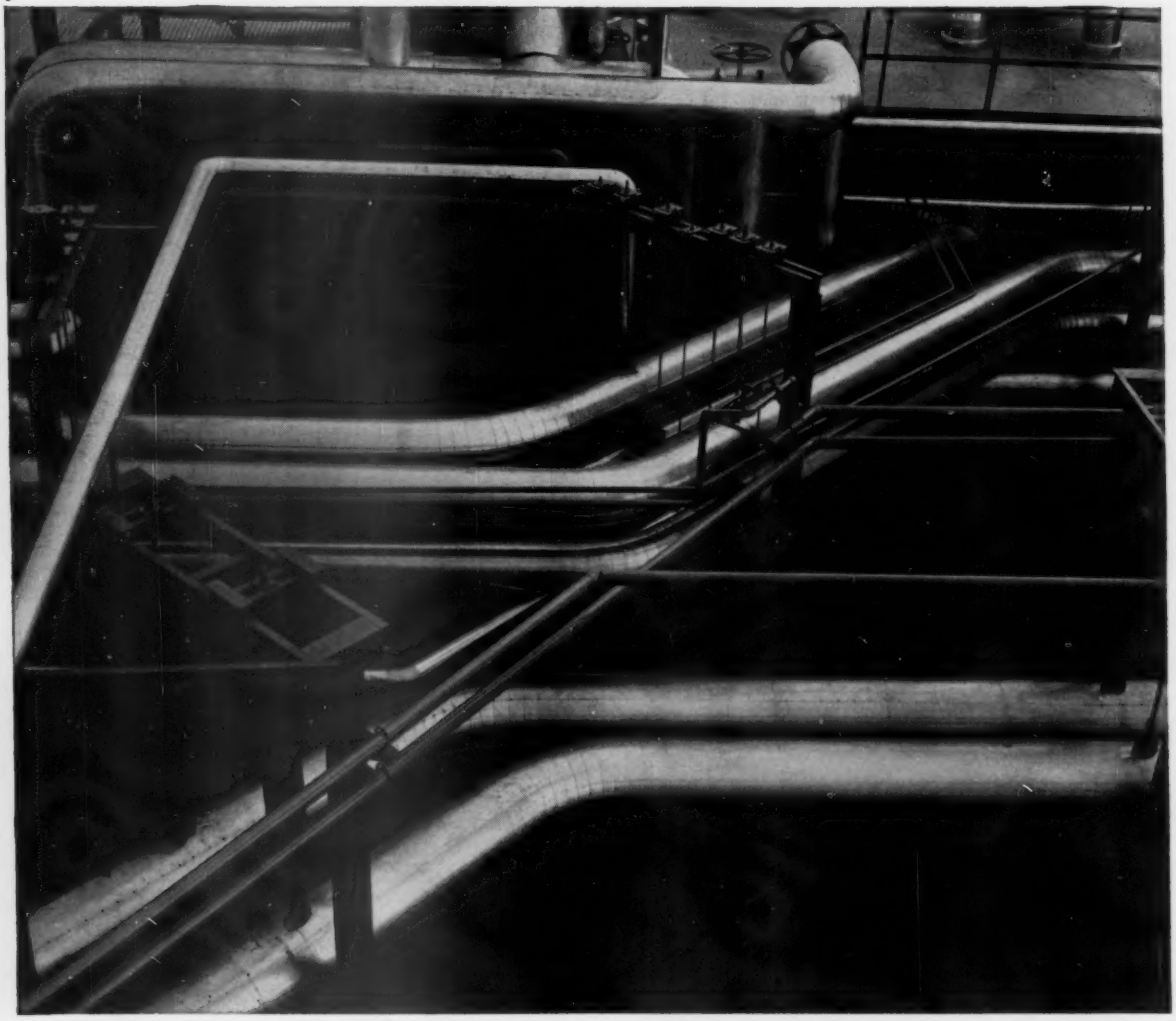
The rigid box type pedestals support top dryers and felt dryer framing. Bottom dryer bearings rest on the base plate.

Felt roll bearings are side-mounted on the upright pedestal rather than behind the frame to provide accessibility for lubrication, maintenance and roll removal.

Open backside framing with enclosed gearing provides safety, accessibility, free air circulation and cleanliness. "Open window" dryer framing is one of hundreds of advanced paper machine designs produced by the creative engineering of Black-Clawson.

The **BLACK-CLAWSON** *Company*

PAPER MACHINE DIVISION • WATERTOWN, N. Y.



Unibestos lets steam pack more power

When high-pressure steam lines are protected with Unibestos, less heat escapes . . . more live steam is available for efficient power production.

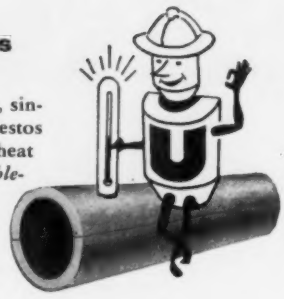
Made of Amosite, Unibestos has strong, interlacing fibers that provide superior insulating protection with only *single-layer construction.* Easy to install, Unibestos is tough, durable insulation that withstands vibration . . . doesn't shatter even under extraordinary impact . . . inhibits corrosion. Built to last, it can be used over and over again without impairing its unmatched insulating properties. Unibestos® pipe insulation is available in sectional form through 44″ O.D.

Write for **Free** descriptive Bulletin 109C.

UNARCO

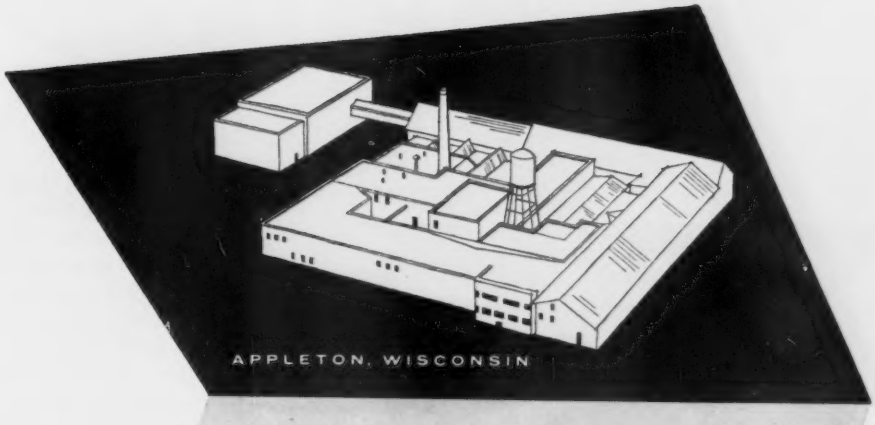
Joe Bestos says:

. . . Remember, single-layer Unibestos locks in more heat than most *double-layer* insulations!



UNION ASBESTOS & RUBBER COMPANY

1111 West Perry Street • Bloomington, Illinois



APPLETON, WISCONSIN

Confidence....in the paper industry

Foresight.....to anticipate changing conditions and requirements of the paper industry with new manufacturing facilities

MONTGOMERY, ALABAMA...
IN PRODUCTION SINCE OCTOBER, 1954

Appleton Wires are Good Wires

Appleton Wire Works, Inc.
GENERAL OFFICES, APPLETON, WISCONSIN

AT MANY WELL KNOWN MILLS

Venturi Evaporator-Scrubbers

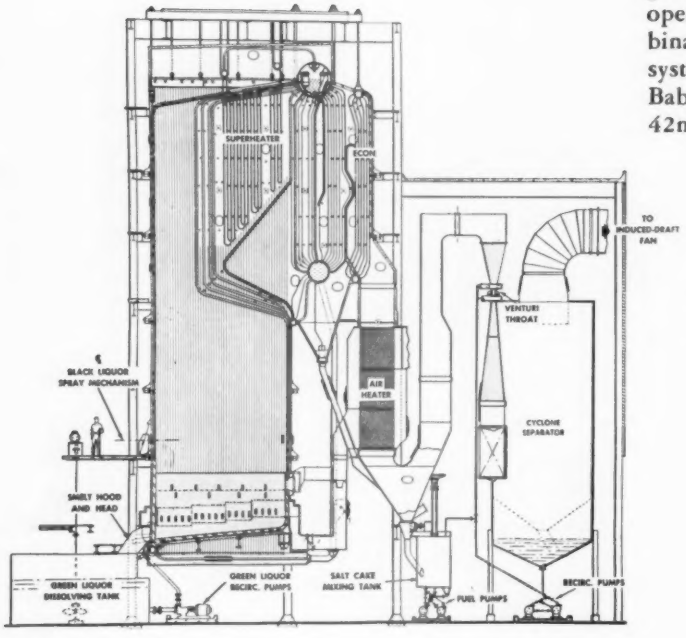
IN B&W RECOVERY SYSTEMS

assure greater operating efficiency

A notable advance in black-liquor recovery is illustrated by the B&W System shown, which features the Venturi Evaporator-Scrubber, and is typical of installations in operation at the Thilmany, D. M. Bare, Western Kraft, Potlatch Forests, Southern Kraft and other pulp and paper plants.

The B&W Venturi Evaporator-Scrubber combines in one unit the concentration of black-liquor with the collection of salt cake fume. Its complete dependability and unusually high efficiency have been thoroughly tested in service for more than three years.

Companies have chosen B&W Recovery Units, equipped with Venturi Evaporator-Scrubbers, for greater efficiency in their black-liquor recovery operations. Whether your mill requires this combination or another, B&W can provide the recovery system that *best* meets your requirements. The Babcock & Wilcox Co., Boiler Division, 161 East 42nd Street, New York 17, N. Y.



VENTURI EVAPORATOR - SCRUBBER LICENSED FROM PEASE, ANTHONY EQUIPMENT CO.

VENTURI-EQUIPPED
B&W Recovery Units
(in operation and on order)

Thilmany Pulp & Paper	Northwest Paper
D. M. Bare Paper	Mead Corp. (Lynchburg)
Western Kraft	Gulf States Paper
Potlatch Forests	National Container
Watervliet Paper	Buckeye Cellulose

Southern Kraft Division
International Paper Co.—4 Plants

ADVANTAGES
of the
B&W Venturi Evaporator-Scrubber

- Simple to operate
- Low in First Cost
- Increases Overall Thermal Efficiency
- Reduces Maintenance Requirements
- Continuous, High, Fume Collection Efficiency
- Minimum Space Requirement
- Reduces Multiple-Effect Evaporator Load

BABCOCK & WILCOX
BOILER DIVISION

P-795

Lab tests prove new overwrap gives highest gloss at low cost

Readings taken with Photovolt Glossmeter show new coated paper matches gloss of laminated transparent stock.

Laboratory tests prove that the new overwrap coated with A-C* POLYETHYLENE-wax blends has a gloss rating equal to that of laminated transparent stocks. Yet it costs 40 to 50% less!

Despite this remarkably low cost, the overwrap coated with this A-C POLYETHYLENE blend is scuff-resistant, has a smooth plastic feel and is equal in quality of appearance to the more expensive types.

Paper converters using A-C POLYETHYLENE find that this low-molecular-weight, low-viscosity polymer improves the stock in many ways without major cost increases. Food wrappers are not affected by high food temperatures, nor will they crack or lose gloss at freezing temperatures. Packages stay sealed; the overwrap *does not wrinkle*, as transparent types do.

Write for information and samples of paper coated with blends containing A-C POLYETHYLENE or ask your paper converter for details.

*Trade-mark

A-C Polyethylene

SEMET-SOLVAY PETROCHEMICAL DIVISION
Allied Chemical & Dye Corporation
Room No. 594
40 Rector Street, New York 6, N. Y.

Allied Chemical

Please send me information and samples of the new overwraps containing A-C POLYETHYLENE.

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SULPHUR

helps to create HEADLINE products

PAVING

FLOTATION OILS

INKS

VARNISHES

TALL-OIL

CLOTH

CUTTING OILS

RUST-PROOF COMPOUND

PAINT

SOAP

New uses are popping up everyday for this refugee from the skimmings of kraft mill black liquor. Tall Oil is fast becoming the antidote to a lot of supply shortage headaches and cost problems.

That Tall Oil is extracted from black liquor skimmings with the aid of sulphuric acid is perhaps not as interesting as the fact the process is carried on at subzero (centigrade) temperatures with highly concentrated acid. Most applications of sulphuric are at room temperature or higher.

Here is a relatively new product, certainly a 'headline' product and it requires a derivative of Sulphur in the reactions that make it!

Texas Gulf Sulphur Co.

75 East 45th Street, New York 17, N. Y.

Sulphur Producing Units

- Newgulf, Texas
- Moss Bluff, Texas
- Spindletop, Texas
- Worland, Wyoming

"Beckman pH Control helps us exceed production goals three ways"

says: Herbert M. Kennedy,
Instrument Supervisor,
East Texas Pulp and Paper Company

In this new 300 ton-per-day paper plant at Evadale, Texas, Beckman pH instrumentation has helped extend production beyond design capacity by automatically controlling pH at three vital points:

1 *Boiler Feed Water.* Feed water is maintained at a pH of 8.5 to prevent erosion of boilers, valves, and feed pumps. Maintenance and replacement costs are substantially reduced.

2 *Raw Stock Storage Tank.* Bleached wood pulp is properly conditioned when kept at a constant 7 pH in storage. "Automatic around-the-clock pH control gives us a consistency and reliability impossible by manual control," Kennedy states.

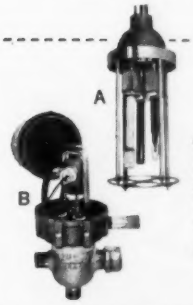
3 *Stuff Box on paper processing machine.* Proper pH control here is essential to prevent paper machine gumming, product rejection and reprocessing. Stock solution pH ranges from 4 to 7 depending on type of paper being run and Beckman instrumentation holds values within ±0.1 pH unit.

Wherever there is water, there is pH. Wherever there is pH, Beckman instrumentation can provide reliable automatic control that will upgrade product quality and process efficiency.

BECKMAN pH CONTROL CONSISTS OF THREE ELEMENTS:

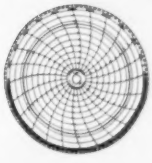
1

The pH Meter is rugged, dependable, moisture-proof. One meter may monitor many different points in a process stream and may be located as far as 200 feet from pH electrodes.



2

The electrodes are virtually unbreakable, require very little care, are pressurized if desired and may be mounted in Immersion Assemblies (A), or Flow Assemblies (B).



3

The recorder or recorder-controller may be any leading make.

Beckman® / *process instruments*

Beckman Instruments, Inc.
Fullerton 1, California

☐ Send a pH System Analysis Form that entitles me to a free engineering analysis for solving pH problems at our plant.

☐ Send a copy of "Industrial pH Measurement & Control."

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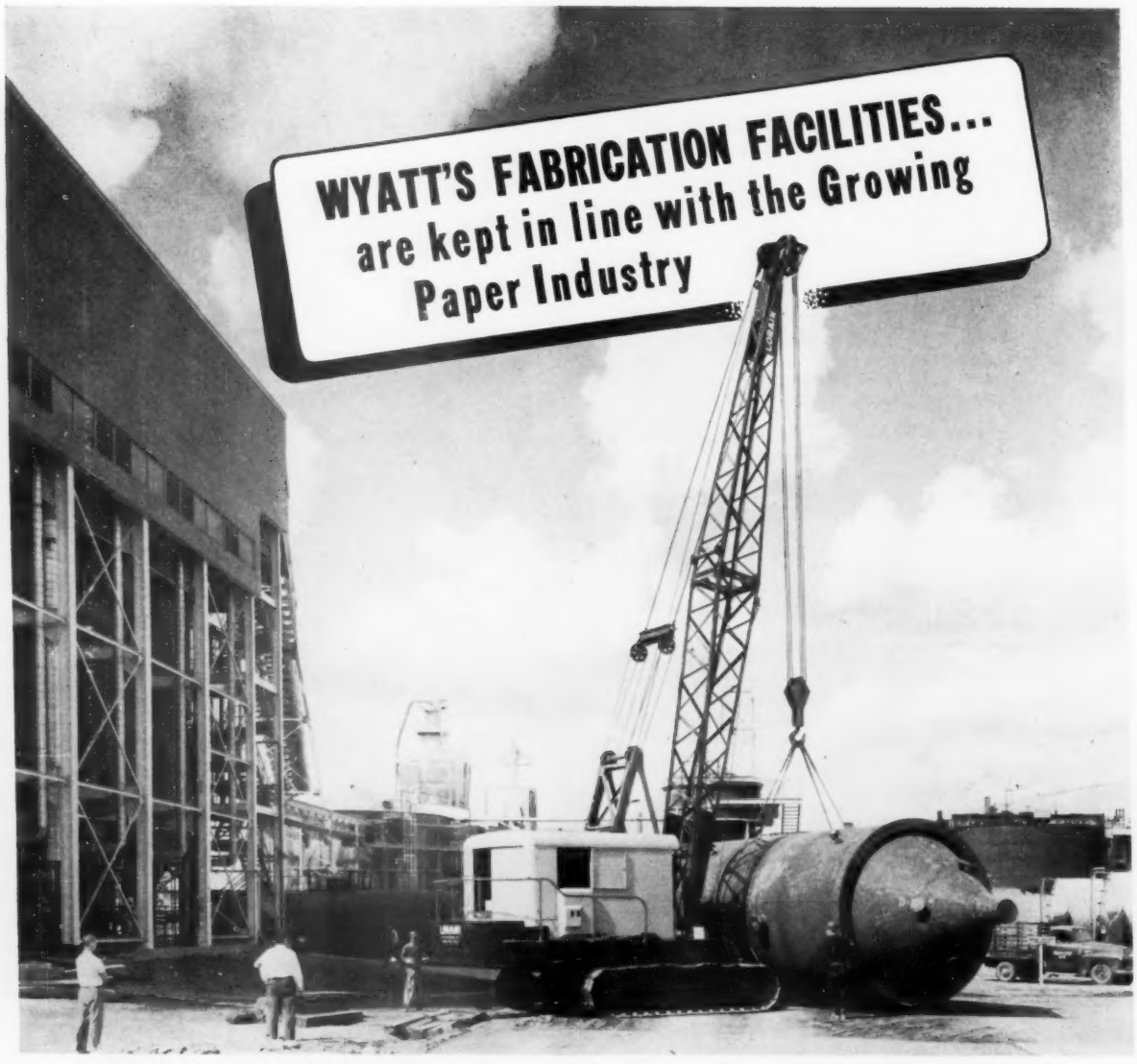
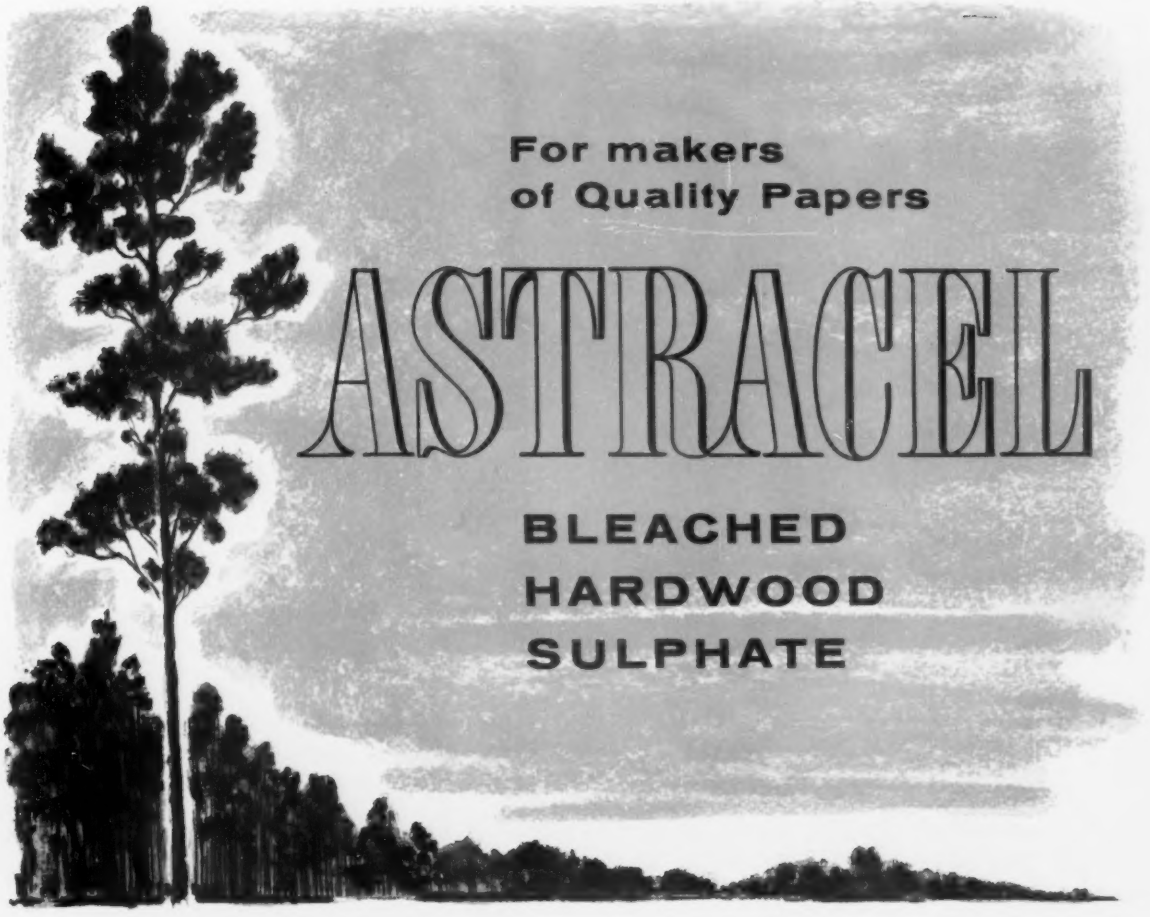


Here One of Wyatt's Digesters is Headed for Its Place in the Expansion that will make the Calhoun, Tennessee Mills of Bowaters Southern Paper Corporation the Largest Newsprint Manufacturer in the South.

WYATT
METAL & BOILER WORKS
DALLAS • HOUSTON

wyatt's
HOUSTON-DALLAS-NEW YORK-TULSA

FABRICATORS AND ERECTORS SINCE 1913



Created by Papermakers for Papermakers

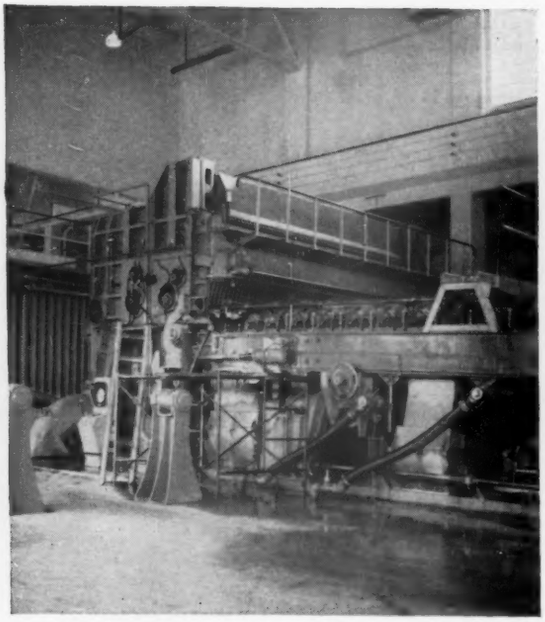
This is a perfected bleached hardwood sulphate . . . made from carefully selected species of southern hardwood trees which yield the longest and finest hardwood fibre available. Astracel has the excellent forming qualities found in northern hardwoods . . . *plus great strength.*

It is produced at Riegel Carolina's pulp mill at Riegelwood, N. C., with every refinement and control known to modern pulp manufacture.

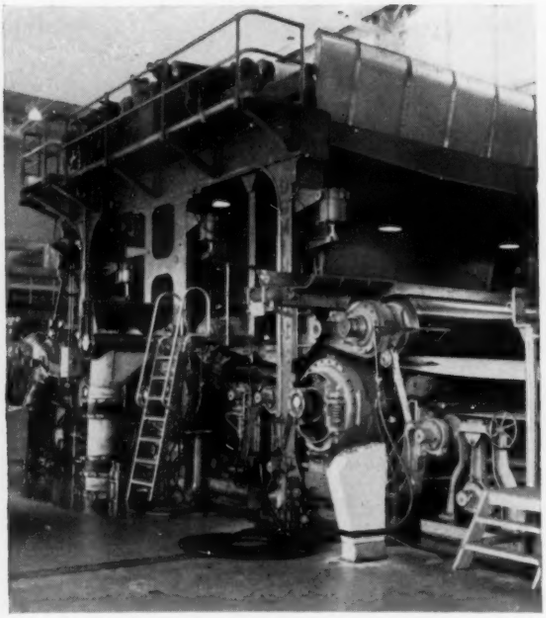
Riegel Carolina Pulps

ALBACEL • ASTRACEL

RIEGEL PAPER CORPORATION • 260 MADISON AVENUE • NEW YORK 16, N. Y.



DOMINION PRESSURE TYPE HEAD BOX feeds the stock efficiently ensuring good formation on the wire at any operating speed.



DOMINION COUCH VACUUM TRANSFER, another design feature contributing to the overall operating efficiency and output.

2,022.6 TONS OF NEWSPRINT IN 6⅔ DAYS!

A typical run for a Dominion Vacuum Transfer equipped 284" newsprint machine.

This machine is equipped with a Dominion Pressure Type Head Box and Couch Vacuum Transfer incorporating a Screw Type Broke Conveyor-Pulper. The latter not only removes broke from the Press section but also reduces it to pulp and returns it automatically to the Couch Pit. 2,022.6 Tons of Commercial Newsprint produced in 6⅔ days is an enviable performance but one that will be surpassed as this machine and others of its type are brought to their design speeds. This is achieved through close liaison between the paper makers of Canadian Mills and the Engineers and Designers at Dominion Engineering.

DOMINION ENGINEERING
COMPANY LIMITED
PAPER DIVISION
MONTREAL TORONTO WINNIPEG VANCOUVER

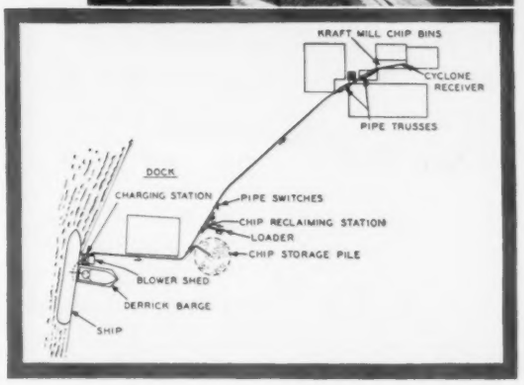
The AIRVEYOR®

takes over

When the chips are down

at

CROWN ZELLERBACH
CANADA LIMITED



To move wood chips from unloading dock to processing, the Airveyor system has been put into operation, and has proved highly successful, at the Ocean Falls, British Columbia, Paper Mill of Crown Zellerbach Canada Limited.

The chips are transported to the plant dock by barge, unloaded by bucket derrick into a chip hopper, and then discharged by flight conveyor into a chip feeder. At this point, the Airveyor, powered by a diesel-driven blower, takes over. The chips are conveyed through a 16-inch pipeline extending 1760 feet to the chip loft over the digesters. It has a rated capacity of 60 tons per hour but has conveyed chips at a rate as high as 67 tons per hour.

Even with this rather unique application of the Airveyor conveying system, the experience of Crown Zellerbach parallels that of so many other companies once plagued by the problems of dry bulk-materials handling.

The Airveyor handles most dry pulverized or granular materials efficiently and economically. Send for details today as your first step toward faster, safer, cleaner conveying—at less cost. There is no obligation.

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Fuller
. . pioneers in harnessing AIR

FULLER COMPANY
128 Bridge St., Catasauqua, Pa.
SUBSIDIARY OF GENERAL AMERICAN TRANSPORTATION CORPORATION
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3259

The best looking papers start with the best pulps!

Specialty papers created from Brown Company pulps give you the finest, clearest, most eye-appealing printing possible.

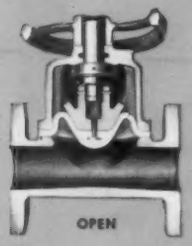
That's why so many leading makers of fine specialty papers ... to be used for illustrated brochures, annual reports, point-of-sale and similar printed matter ... come to Brown Company. Because our pulps are scientifically engineered to meet specific needs.

If you are looking for an engineered pulp for a special paper, we can supply it. Just let us know your problem. Write today to Dept. CP-6, our Boston office.

BROWN QUALITY
COMPANY
150 Causeway Street, Boston 14, Mass.
Mills: Berlin and Gorham, N. H.

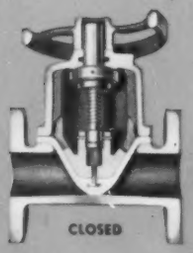
Flow Characteristics
similar to gate valves

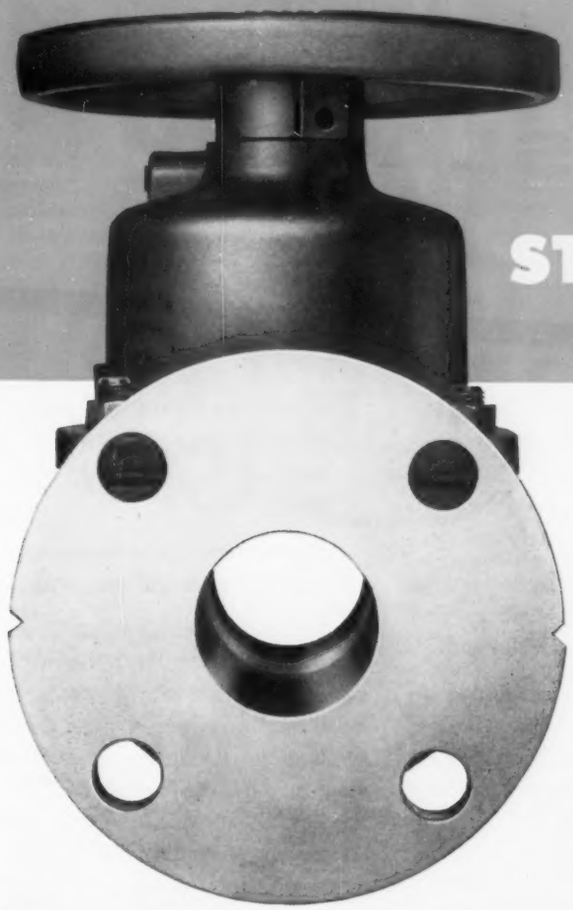
- Streamlined straight-through flow
- Minimum pressure drop
- Handles viscous materials without stoppage
- May be rodded or brushed



Advantages
of a diaphragm valve

- Positive closure even with gritty or fibrous materials
- No pockets to trap sludge
- Bonnet mechanism completely isolated from fluid in line
- Completely self-draining
- Simple maintenance





GRINNELL-SAUNDERS

STRAIGHTWAY
DIAPHRAGM VALVE

For handling viscous materials, slurries, sludges, solids in suspension, sewage and corrosive chemicals, Grinnell now offers a valve which has all the advantages of a diaphragm valve with the added benefits of straight-through flow.

The Straightway Diaphragm Valve* is made in sizes from ½" to 8", screwed or flanged ends, either hand wheel or power operated.

A variety of body, lining and diaphragm materials are available to meet practically all requirements. Descriptive folder gives all details.

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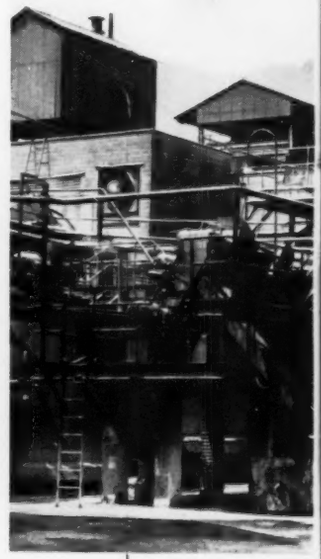
TWO-STAGE LIME SLAKING



Now standard in Dorr Continuous Recausticizing Systems, two-stage lime slaking has simplified and improved the entire causticizing operation. A recent survey of seven Southeastern pulp mills established these definite advantages...

Additional slaking time provides better lime utilization, improved causticity control and increased capacity to absorb kiln surges.

Hot lime handling is reduced to a minimum . . . reburned lime bin can be eliminated or, when used, bucket elevator can be put on stand-by service only through by-pass arrangement.

Green liquor heating is eliminated as heat of reburned lime direct from kiln plus heat of reaction keeps slaking temperature above 200°F.

Gravimetric Type feeder on new lime provides close control over excess lime in System.

Two-stage lime slaking can readily be incorporated into existing Dorr Recausticizing Systems. Several different arrangements are possible and local conditions will dictate the most advantageous. A Dorr-Oliver engineer will be glad to discuss your chemical recovery flowsheet and advise how you can benefit from two-stage lime slaking. No obligation, of course. Dorr-Oliver Incorporated, Stamford, Connecticut.

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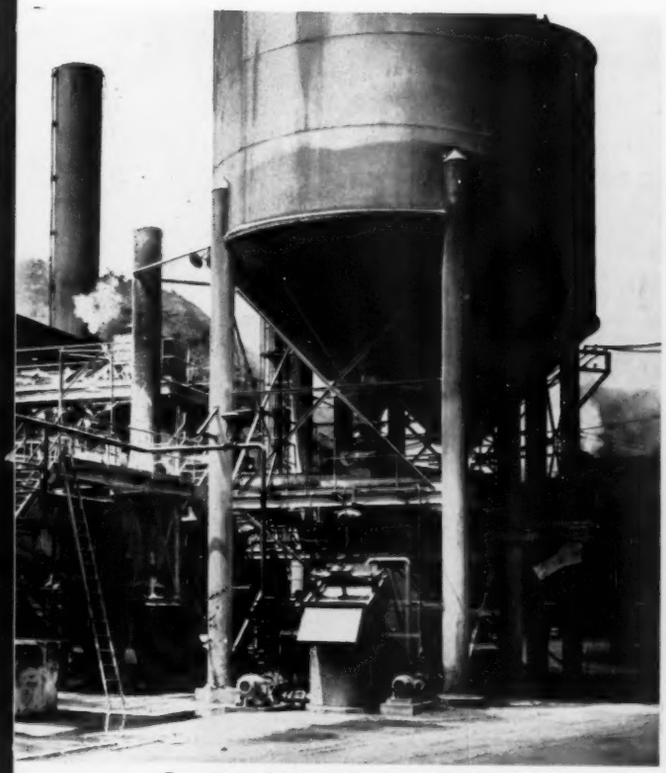
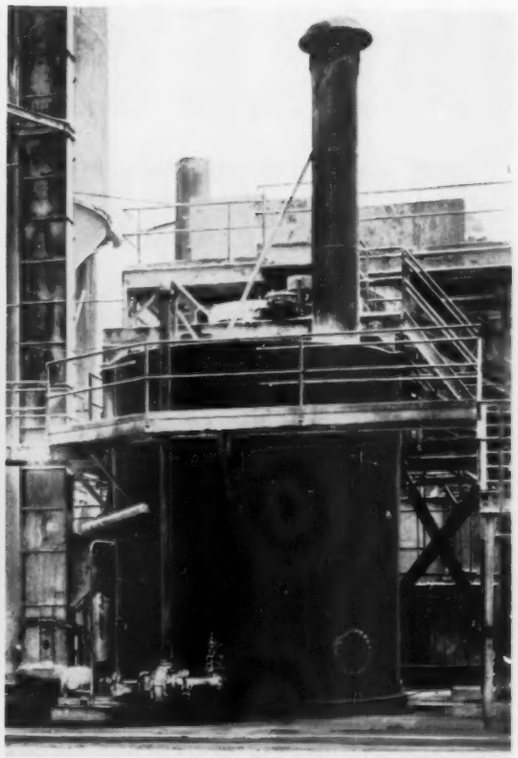
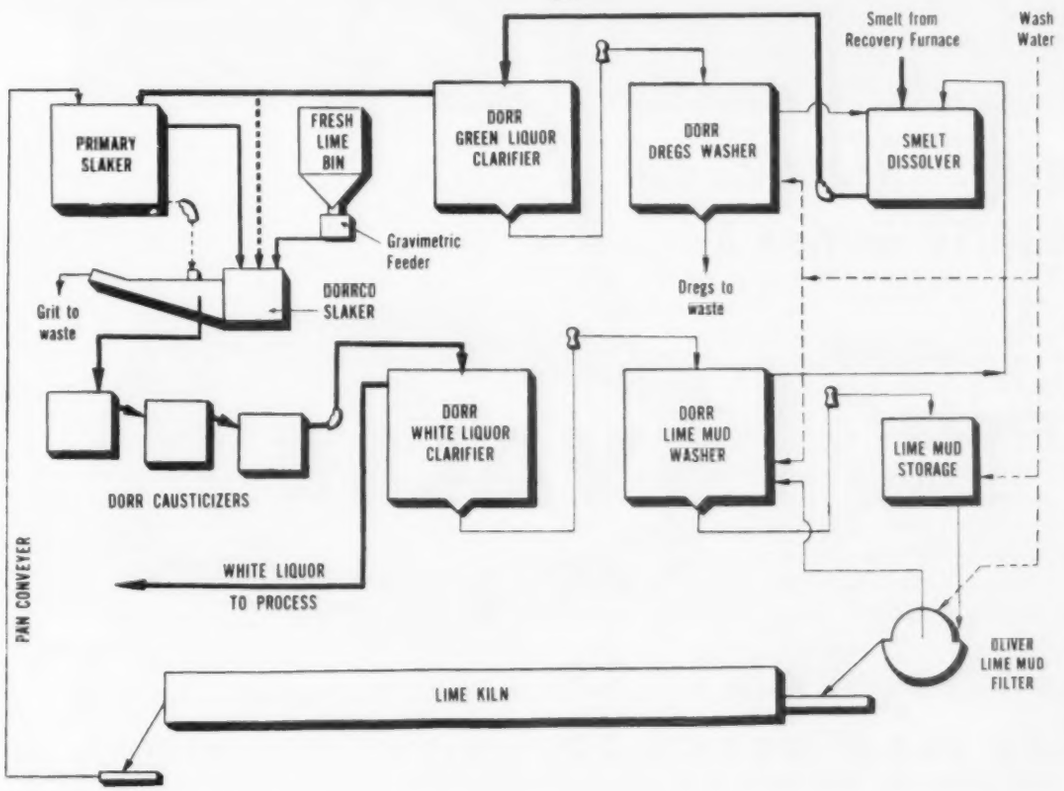


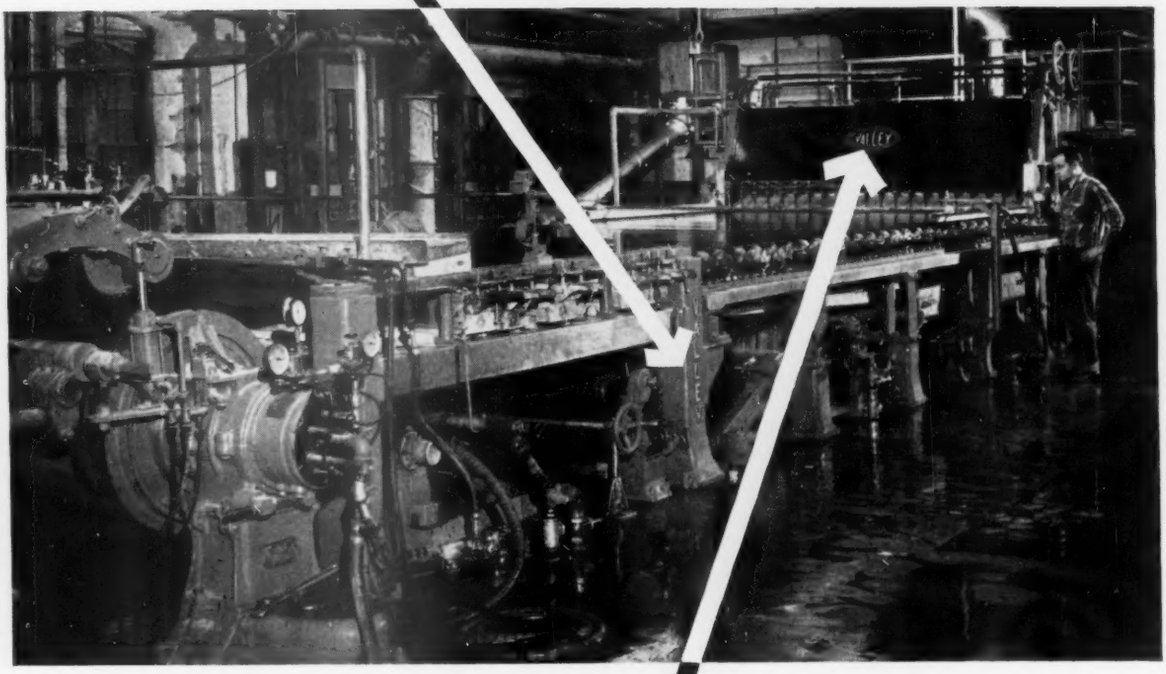
Two-stage slaking station at a Southeastern pulp mill. Dorrco Slaker is at left. Primary lime bin is used only on by-pass from kiln.



Closeup of Primary Slaker with pump for purging to Dorrco Slaker at lower left.



VALLEY FOURDRINIERS



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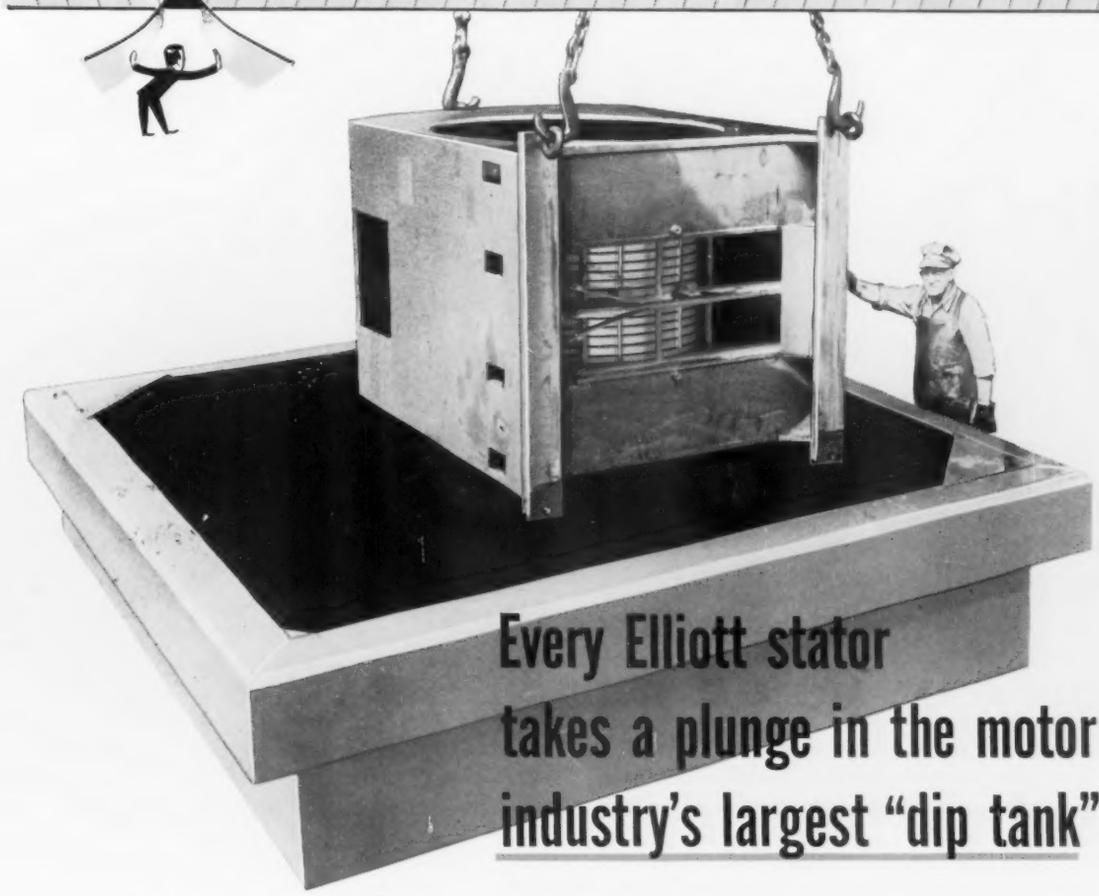

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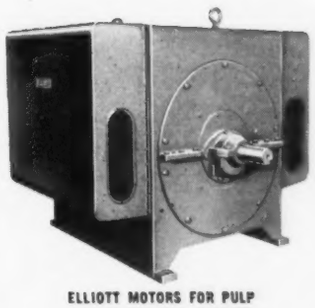
Here is another reason why Elliott Induction Motor coil insulation has proven so successful. *Every large induction motor stator, regardless of size,* is completely submerged in specially selected flexible varnish. This completely saturates the stator winding and provides an additional rust-inhibiting coating to metal parts. After baking to a prescribed process, the coil end turns, leads and joints are given two subsequent dips and bakes. This provides additional assurance against the entrance of moisture, chemical fumes, dust, etc. This is a big plus in the long list of Elliott "extras" in insulation that have contributed to an outstanding record of *not one failure due to insulation* in over 1,400,000 hp of large squirrel-cage induction motors installed through the country during the last 7 years. These motors are serving all over, both indoors and out – in utilities, oil refineries, chemical plants, metal mills, atomic energy plants, shipyards, paper mills, etc. For full facts, ask your Elliott field engineer or write Elliott Company, Ridgway Division, Ridgway, Pa.



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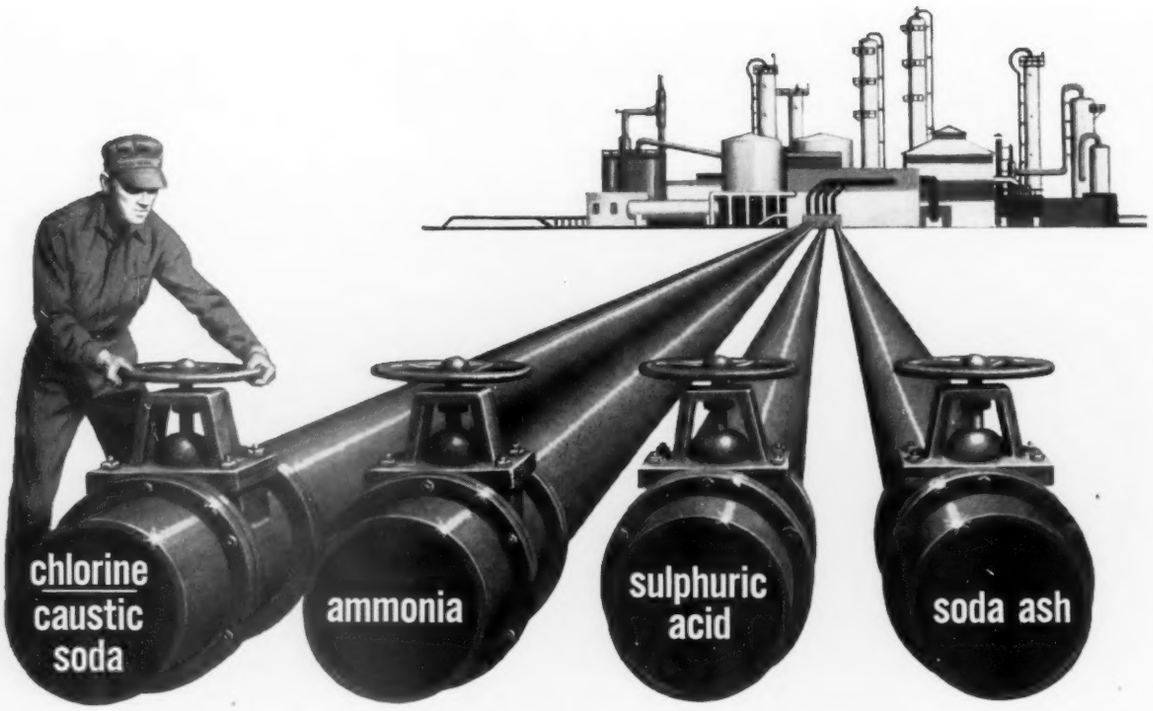

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SIMPSON DRAWS PLANS FOR CALIFORNIA MILL—Simpson Redwood Co. of California, affiliate of Simpson Logging Co., Shelton, Wash., one of the oldest and largest factors in Pacific Northwest forest industry, has engaged V. D. Simons, Vancouver, B.C., consulting engineer, to draw plans for a 300-ton pulp mill and foodboard plant which the company hopes to build at Eureka, Calif.

News of the proposed plant first came to light through announcement that the Simpson interest would like to make arrangements for a supply of water. No trouble is anticipated in obtaining adequate water.

There have been rumors that have not been denied that the pulp and foodboard plant will be a joint venture of Simpson Redwood Co. and Fibreboard Products, Inc. Simpson officials declined to discuss this point, but said there was no secret of their intention to get into the pulp and board business.

Redwood and Douglas fir from present logging operations will be used.

PREDICTS SALES TO DOUBLE—Pres. T. B. McCabe of Scott Paper Co. has set a goal of $500,000,000 for Scott sales by 1961, more than double the 1955 sales. Last time he predicted a doubling of sales it was for this year, and he will hit it on the button. Scott is spending $45,000,000 on expansion and improvements this year. That's up from $36,000,000 invested that way last year; likewise about same amount in 1954.

MORE SOUTHERN MILLS COMING—One big Southeast pulp and paper producer has three sites chosen for another mill, and will decide among them soon. It will make board and very likely some market pulp, too. A major Northern manufacturer of corrugating 9 point is looking around for a Southern mill site and has engineers on the job. Another Southern mill is making a 500 ton addition to its pulp capacity.

SITE SELECTED AT PRIDE, ALA.—Hard to keep up with these Southern moves. A PULP & PAPER editor breezing through U. S. Highway No. 72 got about halfway between Memphis and Chattanooga and local acquaintances revealed a mill site is under option there. It's at Pride, Ala., about 13 miles west of Florence, La., on the south bank of the Tennessee, just 30 miles south of Tennessee and 23 miles east of the Mississippi-Alabama line.

PERMIT FOR BOWATERS IN SOUTH CAROLINA—Now Bowaters Southern Corp., already in throes of a big expansion at its two-year-old mill in Calhoun, Tenn., where a third newsprint machine will start up in December to boost output from 200,000 to 300,000 tons, has its eyes on a Catawba River site near Rock Hill, S.C. The South Carolina water authority granted Bowaters a permit to build a multi-million dollar newsprint mill there.

MORE MILLS IN LATIN AMERICA—Container Corp. of America has broken ground for its big pulp and board mill at Brewton, Ala., the town that was for so long "always a bridesmaid, never a bride" kind of mill site prospect. And now Container is going to build a second mill in Colombia. Already Container has a mill at Cali, Colombia, with a 1952-built Pusey-Jones machine and a smaller cylinder machine and is increasing output there by 50%. It is involved in the second Colombia mill with the government, which announces the new one will make newsprint as well as board. Ebasco is engineering it and W. R. Grace & Co., which holds patents on a bagasse process, is reportedly involved.

W. R. Grace & Co. has definite plans to build more pulp and paper mills in the sugar-producing countries of Central and South America. It would use sugar cane bagasse as a raw material. Instead of the older batch bagasse pulping processes, the new plants would use continuous pulping processes.

"The world shortage of paper has had a particularly severe impact in Latin America," state Chairman Charles E. Wilson and President J. Peter Grace. The company is expanding its bagasse paper mill in Peru, and changing it from batch to continuous processing.

GEORGIA PACIFIC ORDERS MACHINE—Georgia Pacific Paper Co., subsidiary of the G-P Plywood firm, has ordered a Black-Clawson machine for the 250-ton kraft mill it is building near Toledo, Ore. Sandwell & Co. are engineers and William Shelton is resident manager-appointee working closely on equipment plans.

THILMANY'S EXPANSION — Thilmany Pulp & Paper's expansion budget for 1956-7 is $5,000,000, according to Executive Vice Pres. Charles R. Seaborne. The new Black-Clawson machine with a giant 15-ft. Yankee drier is the main item, but three tumbling digesters are going to be replaced, two by Blaw-Knox using Lukens so-called "digester stainless" and the other an A. O. Smith "Oxyrim" digester. Also Thilmany will have a new Babcock-Wilcox 600 lb. pressure boiler. Future planning includes a new drive for No. 8 machine and new high speed headbox for No. 7.

ALSO IN MIDDLE WEST—Neenah Paper Co. is merging into Kimberly-Clark, giving the latter cotton content line of writing papers. It is stated the Neenah staff will remain intact. . . . Over at Bergstrom Paper Co., an $800,000 finishing plant is near completion. . . . Whiting-Plover Paper Co. is spending $900,000 on conversion to a high pressure steam system, added space for finishing and new machinery, says President Tom Leech. . . . A Chicago engineering firm, Johnson & Johnson, is working on the board mill which Abitibi of Canada is building at Alpena, Mich., using hardwoods. . . . And American Boxboard is pushing its expansion at Filer City.

HUSS LUMBER GOES INTO PAPER—Huss Lumber Co., Chicago, has long been close to the paper industry of the Midwest and it was no great surprise when Huss-Ontonagon Pulp & Paper Co. was formed. It purchased National Container's idle mill at Ontonagon in the upper Michigan Peninsula in a multimillion dollar deal. Alvin I. Huss, president, told PULP & PAPER considerable new equipment will be required and it is probable this will include a Fourdrinier machine. The neutral sulfite semi-chemical pulping process will be used to make 9-point from hardwoods.

$55,000,000 EXPANSION—That's the 4-year program figure for Marathon Corp. and the major expansion, of

course, is the Naheola, Ala., pulp, paper and board mill. It will have three paper machines and starts up production in late 1958.

IMPROVEMENT AT BERGSTROM—Bergstrom Paper Co., Neenah, Wis. goes into June with both its Fourdrinier machines improved and speeded up, according to Nathan Bergstrom, president. They are 132-in. and 144-in. trim, making supercalendered book, eggshell and English finish papers.

The machines were designated No. 3 and No. 4 and work completed on No. 3 during May was to be generally similar to that done on No. 4 several months ago. E. P. Doan, Jr., vice pres., and production mgr., had direct supervision. The machines were rated at a total of 105 tons a day total production.

Two of 3A Bird screens, and one new screen will be elevated on No. 3 for greater speed and Dirtecs were placed ahead of the screens. A new 36-in. Beloit suction couch and a 30-in. lumpbreaker roll were installed. A Foxboro moisture control system was included. Biggest single item was revamping Reliance drive to give a maximum speed of 1000 fpm. A new room houses the control panels in building No. 7. Trusses at the wet end were reinforced so the cranes can safely handle the 9-ton couches.

Chas. T. Main, Inc., Boston, made layout drawings and its engineers assisted the rebuild. Beloit Iron Works had two erection engineers present to supervise installation of equipment.

DOWN IN ALAMO COUNTRY—U. S. Gypsum has started up its new Houston, Tex., board mill. All major equipment was by Black-Clawson including a 121-in. cylinder machine and engineering and construction was by Brown & Root, Inc., of Houston.

$25 MILLION BY NATIONAL—National Container Corp. has announced a 5-vear expansion program aimed at doubling present 475-tons-a-day production at its Jacksonville, Fla., mill. The company will spend $25 million. Vice president and general manager William T. Webster said National has purchased 55 acres of land adjacent to the mill from Southern Railway for about $200,000. Part of this land will be used for expansion. Mr. Webster said the firm is still negotiating with the City of Jacksonville to exchange part of the railroad land for city-owned property better adapted to mill use.

Jacksonville mill was completed in 1938. An earlier plan to expand the mill was postponed when decision was reached to build National's comparatively new mill at Clyattville, Ga., near Valdosta. The Georgia mill has been in operation since 1954.

AT BREWTON, ALA.—Construction on the multimillion dollar Container Corp. of America mill is now under way. The mill will produce 300 tons a day of bleached sulfate pulp and board.

ALSO FOR GAYLORD – Gaylord Container Corp., recently merged with Crown Zellerbach Corp., has started its $2 million expansion program at Bogalusa, La. Products will be upgraded and production boosted.

FOURDRINIER FOR DIERKS—Rust Engineering Co., designers and engineers of proposed $15 million paper mill to be built by Dierks Paper Co., subsidiary of Dierks Forests, Inc., said they have ordered a 166-in. Fourdrinier machine from Black-Clawson Co. The mill, to be built at Pine Bluff, Ark., will produce about 150 tons of high grade liner board a day.

MILL FOR TENNESSEE—A $35 million pulp and paper mill is planned by the newly formed Pulpwood Development Co., Inc., to be located on a 300-acre wooded tract at Fulton, Tenn., on the Mississippi River. Halls (Tenn.) timberman W. O. Suggs, president of the corporation, said the type of paper to be produced by the mill has not been determined.

NEWSPRINT SURVEY—Figures from a news service in New York are that the North America newsprint industry is spending $350,000,000 on expansion, adding 25% to capacity in the next two years, mostly in Canada. They will add nearly 2,000,000 tons. These figures are probably already out-of-date, due to fast-breaking late news of plans in this field.

CAMAS EXPANDS—At Crown Zellerbach's Camas, Wash., mill a new Babcock & Wilcox 350 ton kraft recovery boiler—a $2,000,000 investment—is being added. This will be the third for kraft at Camas. New Buell precipitators will also be installed. Hoffman Construction of Portland, Ore., is doing the foundations. Camas also started up its 2,000,000 lbs.-a-year pilot plant to make dimethyl sulfide from lignin and other kraft pulping recoveries. It can be used as a sulfur carrier in agriculture and rubber chemicals, as a solvents base and a masking agent. CZ expects big things; it will license the Swedish process to others.

WET STRENGTH RESINS – New Hercules Powder Co. plant at Portland, Ore., to make wet strength resins for papermaking is completed and operating. This is an addition to other Hercules Portland installations making rosin size, defoamers and wax size.

ST. REGIS ADDS ANOTHER—Pacific Waxed Paper Co., of Seattle, doing a $5,500,000 business last year in 11 western states, is a new acquisition of St. Regis Paper Co. The Rhinelander-St. Regis merger was completed and the Rhinelander division is expected to ring up $25,000,000 sales this year, giving St. Regis a record total of $350,000,000 for 1956.

Mathieson Expanding Alabama Chlorine Manufacturing Site

Olin Mathieson Chemical Co. will spend $7,500,000 to double its electrolytic production of chlorine and caustic soda at the McIntosh, Ala., plant.

Multi-million dollar additions will boost plant capacity to 250 tons of chlorine and 280 tons of caustic a day. Expansion will also include construction of barge docking and loading facilities on the Tombigbee River adjacent to the McIntosh site. Docks will be in operation late this summer permitting shipment by water from the plant to depots along the river, the Gulf of Mexico and even beyond.

Equipment will include 124 of the latest design Mathieson stationary-type mercury electrolytic cells which produce chlorine, caustic soda and hydrogen by passing electric current through a common salt solution.

Expansion is the result of the current increase in the use of these chemicals throughout Southern big industry. Among processes using products made at McIntosh is the chlorine dioxide pulp bleaching system now in use in several maior pulp and paper mills in the South. Use of chlorine and caustic has more than doubled from World War II high of 1,300,000 tons of chlorine and 1,900,000 tons of caustic to 3,300,000 and 3,900,000 tons in 1955. Estimates put use at 4,800,000 tons of chlorine, 5,000,000 tons of caustic by 1965.

Two other Olin Mathieson plants at Saltville, Va., and Niagara Falls, N. Y., also produce electrolytic chlorine and caustic soda.

Big News For Semi-Chemical Pulping of Book Papers

Combined with announcement of expansion of semi-chemical pulping at Wisconsin River (Wis.) Div., Consolidated Water Power & Paper Co., comes the news that this company has successfully used mixed hardwoods semichemical pulps for the first time in making its Enamel printing paper grades.

Expansion of neutral sulfite semichemical pulping to 100 tons a day at Wisconsin Rapids is underway. To accommodate use of local mixed hardwoods, construction calls for a bleach plant addition and conversion of another sulfite pulp digester to semichemical pulp. Changes will permit separation of sulfite and semichemical pulps in bleaching and will provide for continuous semichemical bleaching.

Alabama Officials Discuss Mill Plans with Marathon

Gov. Folsom and seven other Alabama state and civic leaders toured the Marathon Corp. mills in Green Bay and Menasha, Wis., on a "get acquainted" visit with Pres. John Stevens Jr. and other Marathon executives who are building a large pulp and paper mill at Myrtlewood, Ala. Gen. Lewis A. Peck, builder of the Burma Road, who heads Alabama's industrial development board, Vice Pres. W. Cooper Green of Alabama Power Co., and the mayor of Linden, Ala., were in the group.

They discussed plans to provide highway and water transport for the new mill. Marathon purchased a railroad which will serve the mill.

Coosa River Expansion Target is Early 1958

New machine buildings are being designed and construction is under way for the new newsprint machine and pulping additions to Coosa River Newsprint Co., Coosa Pines, Ala., says Arthur G. Wakeman, president.

"The expansion program is to be completed sometime in early 1958," he said. "Orders for machinery have already been placed. Estimated production for the new machine has been completely contracted for by stockholder-customers and all contracts have been extended to 1970."

Coosa River sales reached a record $22,811,000 in 1955, compared to $18,977,000 in its first year—1951. It sold 59.037 tons of pulp on the market in 1955, a little higher than in 1954, and a record 133,238 tons of newsprint.

Powell Eyes South For Mill

● Powell River Co., producer of newsprint and market woodpulp, is "actively studying" the advisability of building a mill in the Southern pine region of the U.S. At the same time, its long-discussed Kitimat, B.C., newsprint mill project becomes "quite uncertain."

These statements were made by Harold S. Foley, chairman of the board, to Powell shareholders. He referred to three major newsprint mills now operating, and already expanding, in the South and the influence they have had on what used to be Powell River's traditional markets.

"Federal and local governments in the South offer many inducements to attract industry, including tax concessions," he said, "while in British Columbia we have had to shoulder three substantial new tax burdens in recent years.

"In the South there are still timberlands which can be purchased and owned outright and cropped on a long-term basis to insure continuity of supply," said Mr. Foley. "Logging costs are favorable; capital costs are substantially lower than in British Columbia, and because of proximity to markets, freight costs are about half ours."

Studies are being continued by Powell River on the Kitimat project, in partnership with Aluminum Co. of Canada, but several adverse factors have developed. For one thing, a preliminary report on forest resources of the area shows a heavy percentage of over-mature, decadent timber and this would have an important bearing on unit cost of extraction of usable wood.

Mr. Foley referred to the possibility of revising the present forest management program as a result of the Sloan Commission's hearings. Kitimat Pulp & Timber Co., the company created to build the paper mill, had applied for a forest management license.

Another uncertainty is the result of the unprecedented demand for aluminum which is consuming all available power at Kitimat. The proposed paper mill was to use surplus power.

Mr. Foley did not mention it, but Powell River's recent deal with B.C. Electric Co. for additional hydroelectric power to Powell River has removed some urgency in the company's expansion program. A ninth paper machine is now being added at Powell River. It would cost less to further expand there, instead of build a new mill.

Biggest USFS Timber Sale Outside Alaska

● Three companies participating in oral bidding for 3 million cords of Colorado pulp timber at Denver—reportedly the largest single sale by U.S. Forest service outside of Alaska—ran the unit cost up from $1.05 minimum to $3.25 per cord. J. J. Rogers Co., which recently announced plans to install ammonia base pulping at its 2-machine sulfite mill at Ausable Forks, N.Y., was successful bidder.

The final contract award is scheduled for on or before Oct. 1, by which time the successful bidder must have a fund of at least $1 million immediately available for constructing a "pulp mill or other wood processing plant" of a minimum 100-ton daily capacity for utilizing the timber.

According to David W. Wollin, president of Rogers, his firm will build a newsprint mill on a 125-acre plant site which has already been acquired, with water rights in western Colorado near Silt. He said other kinds of paper will likely be produced when the mill reaches full development—which, according to the purchase contract, means a minimum of 300-ton capacity by April 1962.

How-Lea Corp., of Lansing, Mich., and Allied Paper Mill division of the Thor Corp., headquartered in Chicago, were the other participating bidders.

This pulpwood consists of dead and live Engelmann spruce and associated species covering a 275,000-acre area of the White River and Routt national forests within a 45-mile radius of Glenwood Springs. The marked timber must all be cut within 30 years, under the contract, and the 100-ton daily minimum mill must be in operation by Dec. 31, 1957.

Bid rates will be effective for all timber cut prior to April 1, 1962. Subsequent prices will be renegotiated every year.

Charles F. Chaplin, vice president of Allied Paper, represented his firm at the auction.

Bid increases were accepted in multiples of 5¢ per cord, each minimum advance representing an additional $150,000 potential purchase price. The $1.05 per cord minimum consisted of 50¢ stumpage, 50¢ for sale area betterment, and 5¢ for slash disposal. Above-minimum bids were for increased stumpage price only, the other two factors remaining at 55¢ total. Final stumpage bid of $2.70, plus fixed charges, brought the per cord offer of $3.25, a potential total price of $9.75 million for the timber.

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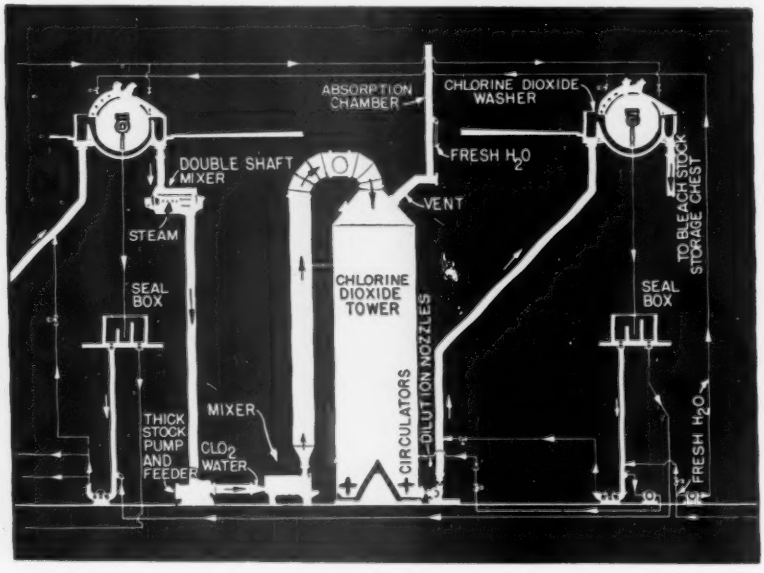

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With the advent of chlorine dioxide bleaching in the United States, IMPCO studied the problem carefully and tailored the first working high density system. This pioneering unit was installed in a prominent mid-southern kraft mill with outstanding results. Since that time IMPCO systems have gone into operation on soda, sulphite and semi-chemical pulp. This continuous high density process has produced successful results from the very beginning and today 22 IMPCO systems are bleaching over 6000 daily tons of high brightness quality pulps. We welcome the opportunity to work with you.

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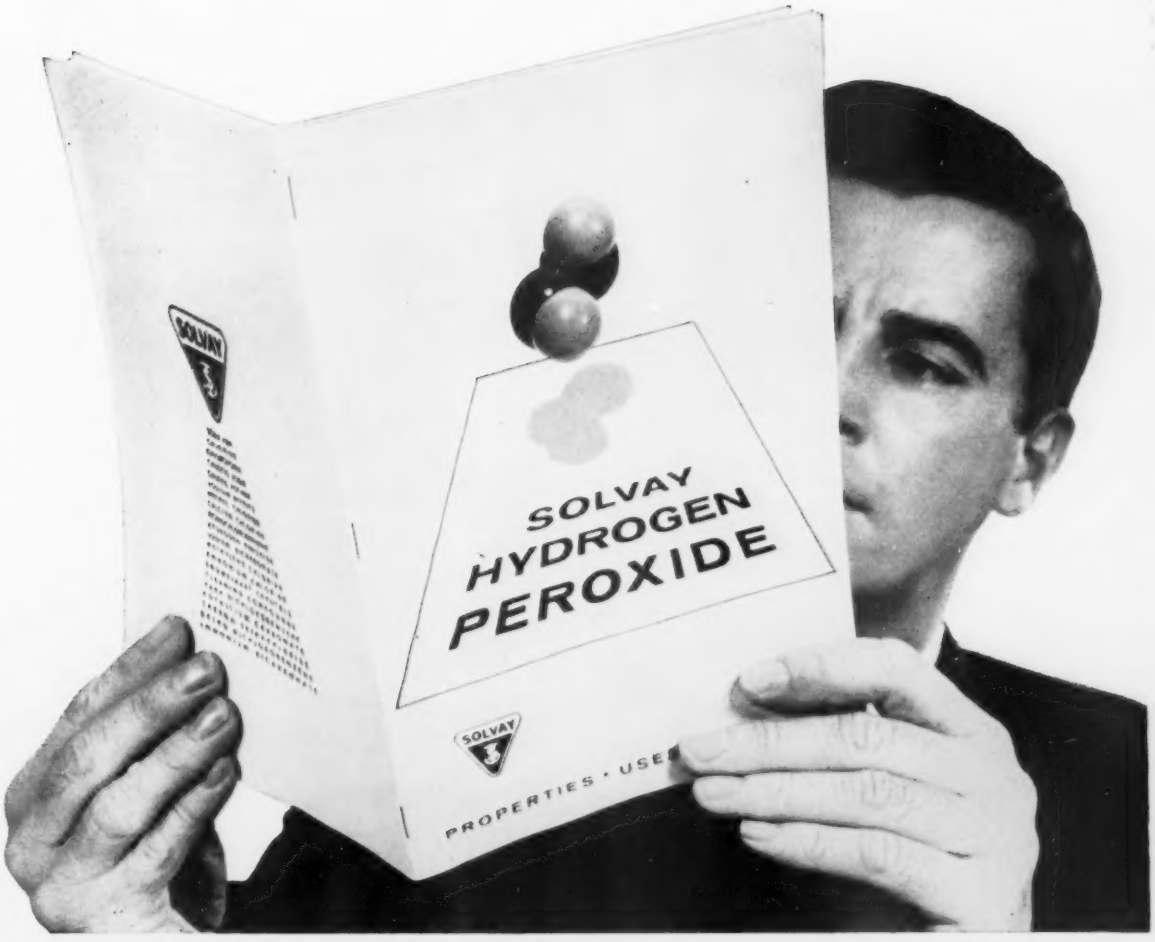

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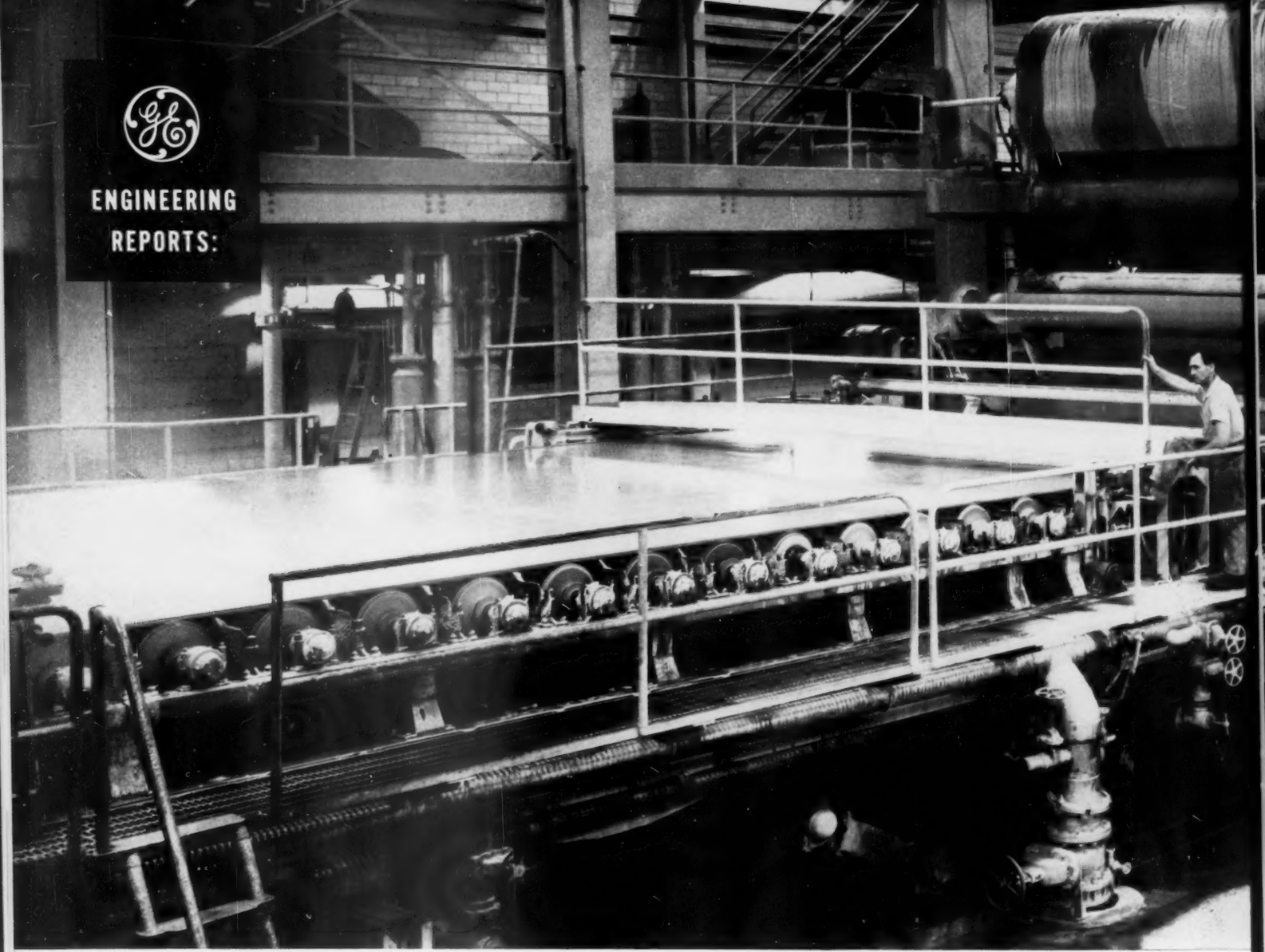
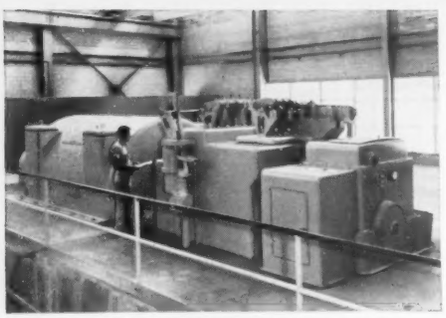
BG-6

ENGINEERING REPORTS:





ABOUT HALF of the mill's electrical requirements are produced by two 10,000-kw, single automatic extraction, non-condensing steam turbine-generator units, one of which is shown above. Steam is re-used for paper processing to increase mill's efficiency.

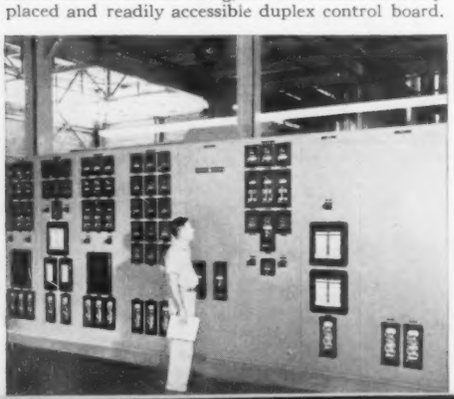
At Bowaters' new $60,000,000 mill,

General Electric engineered electrical system helps Bowaters Southern exceed mill design capacity

The Bowaters Southern Paper Corporation, Calhoun, Tenn., is one of the newest paper mills and the largest newsprint mill in the South. Recognized for outstanding—and in some areas revolutionary—paper manufacturing methods, Bowaters installed a G-E engineered electrical system designed to handle present huge power requirements and allow for future expansion.

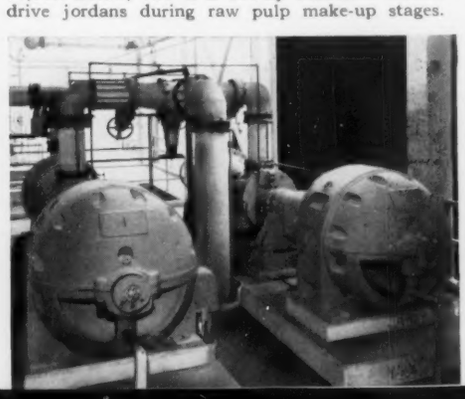
THE ELECTRICAL EQUIPMENT for generation, distribution and utilization was completely co-

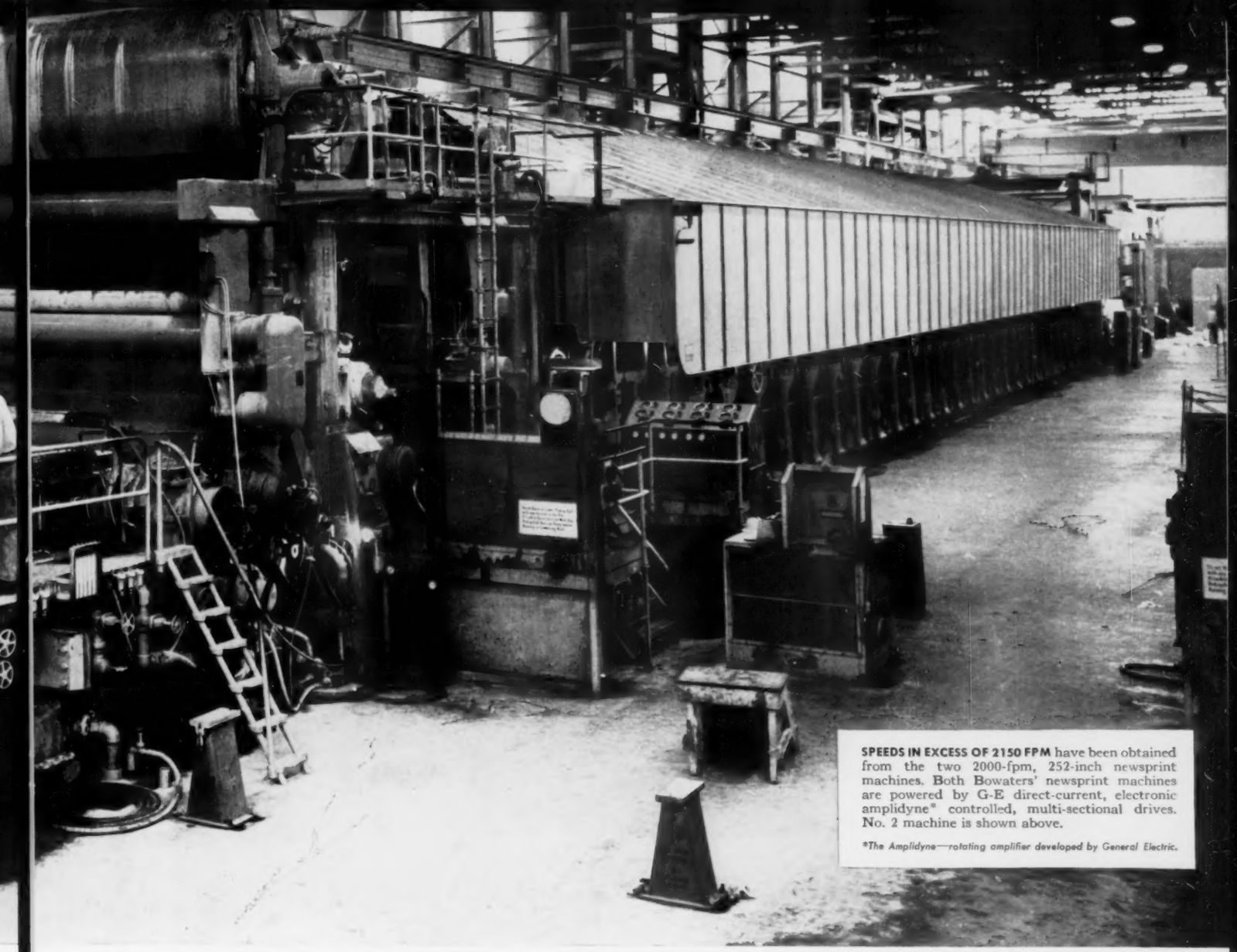
"BRAIN" of the distribution system, center for the mill's controls and metering, is located in this centrally placed and readily accessible duplex control board.



EIGHT G-E 4500-horsepower synchronous motors drive grinders, each devouring two cords of five-foot wood an hour. G-E switchgear is shown at far right.

TOTAL HORSEPOWER of all the mill motors is about 74,000. Below, two G-E 300-hp induction motors drive jordans during raw pulp make-up stages.





SPEEDS IN EXCESS OF 2150 FPM have been obtained from the two 2000-fpm, 252-inch newsprint machines. Both Bowaters' newsprint machines are powered by G-E direct-current, electronic amplidyne* controlled, multi-sectional drives. No. 2 machine is shown above.

*The Amplidyne—rotating amplifier developed by General Electric.

production hits 550 tons of newsprint, 150 tons pulp per day

ordinated and system engineered. It was designed for, and is operated with, the system neutral grounded at all voltage levels. The 13.8-kv main voltage level is very satisfactory for the present large load and adequately provides for future growth requirements. System flexibility was demonstrated by the fact that it was possible to exceed original design capacity and obtain greater production without endangering plant personnel or equipment.

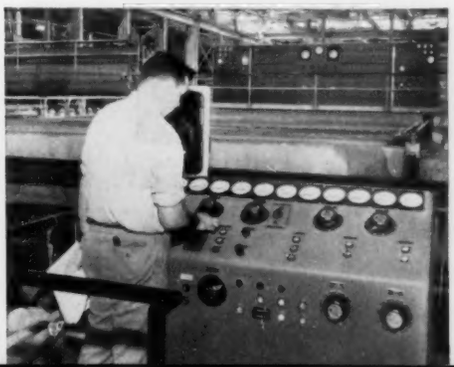
WHEN YOU EXPAND OR MODERNIZE, investigate the advantages of G-E electrical equipment and engineering services. G-E engineers will work with you to design and install an engineered system that meets your production requirements. These services will help by saving you valuable time and by helping to co-ordinate your project through start-up.

YOUR G-E APPARATUS SALES REPRESENTATIVE will tell you more about G-E equipment and G-E engineering services. Contact him early in your planning and write for bulletin GED-2244, "Engineering Services," to General Electric Co., Section 681-9, Schenectady 5, N. Y.

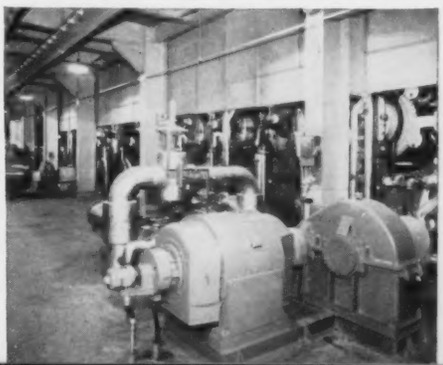
Engineered Electrical Systems for the Paper Industry

GENERAL ELECTRIC

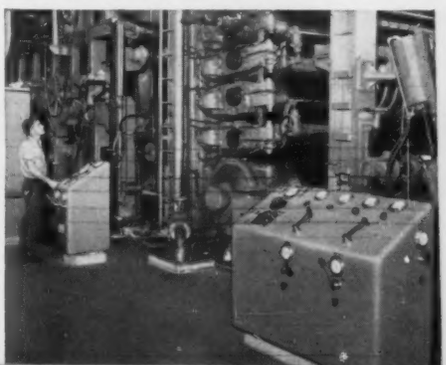
WIDE DRAW ADJUSTABILITY for maximum flexibility and paper quality is accomplished through wet-end control. Draw is set with simple rheostat adjustment.



UNOBSTRUCTED ACCESS to the backside of the machine with G-E direct current sectional drives is demonstrated by this view of No. 1 machine.



INSTANT SLACK TAKE-UP and adjustable acceleration and deceleration are possible with G-E sectional drives. Below is operator's calender and reel console.



One of a series showing how Stowe-Woodward's better quality control results in better papermaking rolls.

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Even the highest grade of raw rubber varies from lot to lot. Its quality is influenced by such factors as the growth season, rainfall, and soil conditions . . . not to mention care in its handling.

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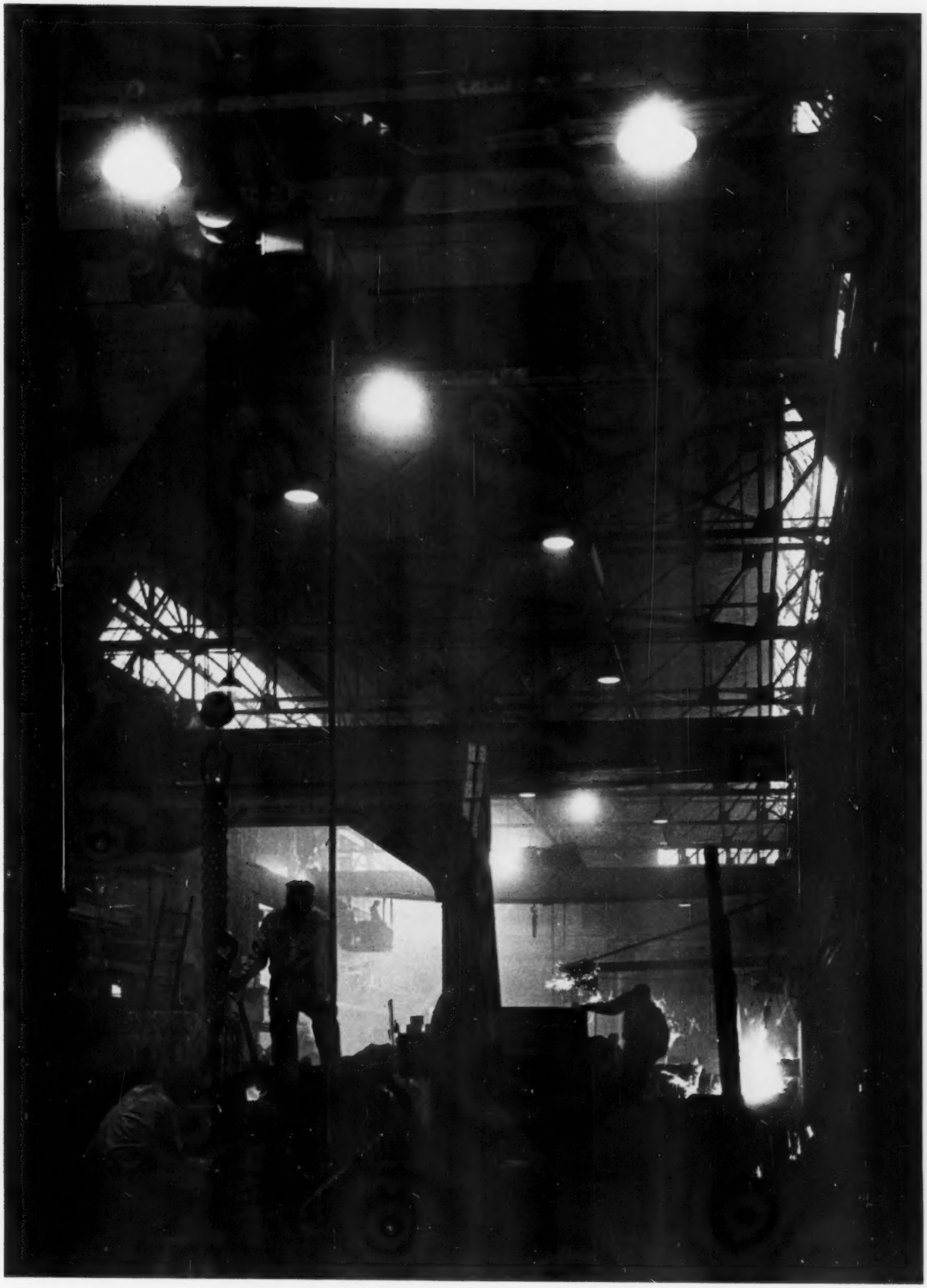

TORKEL KORLING

MAIN BAY . . . *Foundry at Beloit Iron Works, Beloit, Wis.*/ *For further details, please turn the page.*

MAIN BAY

In the main foundry bay at Beloit Iron Works, seen in the photograph on the preceding page, the cupola is being tapped into a 15-ton ladle as the day's heat gets under way. Each heat is accompanied by meticulous technological control of sand characteristics and metal analysis. During Beloit's current expansion program this bay will be doubled in size and a separate bay will be built exclusively for casting rolls and dryers. Plans also include the installation of a new core room and expansion of melting, moulding, and sand system equipment.

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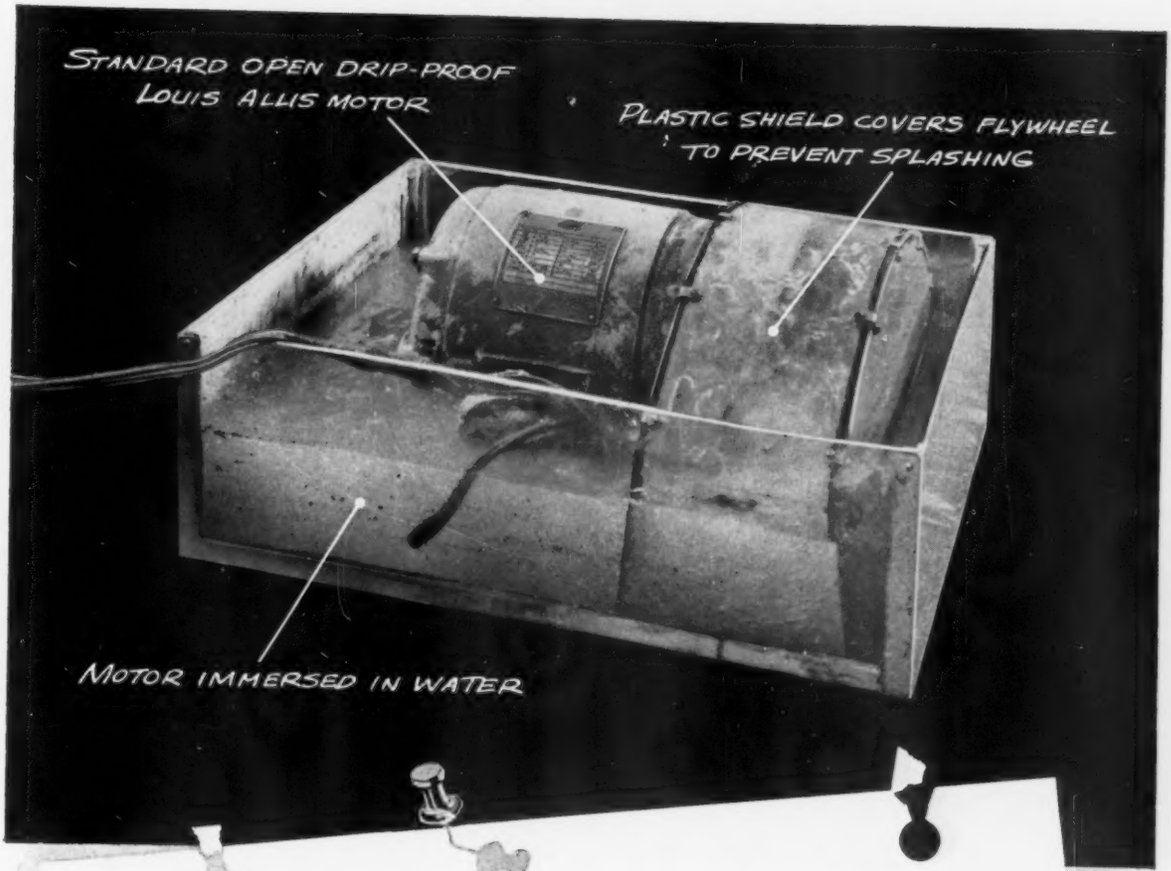

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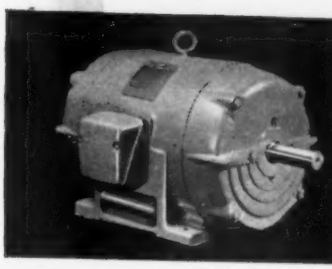
Insulation usually determines the life of a motor. That's why the insulating materials used in the new L. A. line are the product of years of continuous research and development. That's why Louis Allis motors run longer . . . give less trouble.

Find out the many other advantages available to you in the new L. A. line of motors. Write for our new bulletin No. 1700.



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A PULP & PAPER SPECIAL

How Should Industry Regard Science

The Engineer and Scientist have different roles and it may mean much to Management to understand this clearly

By JOHANNES A. VAN DEN AKKER
Head of Dept. of Physics and Mathematics
The Institute of Paper Chemistry

DR. JOHANNES A. VAN DEN AKKER, who has written this article especially for PULP & PAPER on a subject of basic importance to this industry. How the industry deals with these matters could easily delimit or extend its future growth in new pulp and paper uses, new processes, new markets etc. Dr. Van den Akker was born in Los Angeles. He earned b.s. and ph.d. degrees at California Institute of Technology, Pasadena, Calif. He was instructor in physics at Washington University, St. Louis, before joining with Institute of Paper Chemistry in 1935. He heads the Dept. of Physics and Mathematics at the Institute.

"BETA RAYS CONTROL PAPER PRODUCTION" proclaims an interesting and valuable development—but if the news story goes on to hail this as another accomplished objective of science, engineers and scientists alike will be chagrined. Why?

The engineer's chagrin will probably be of a dual nature: First, he finds he might in principle have put beta rays to work 40 years ago (when the scientist was studying the passage of beta rays through paper and metal foils for his purposes) and might actually had done so if industrially feasible radioactive sources of beta rays had been available.

Second, the engineer deserves full credit for the successful application to the processes of industry of the discoveries and principles of science and engineering. The scientist's chagrin at seeing yet another indication of the public's misconception of his motivation runs deep; the public should understand this. What is the scientist's motivation?

It is extremely unlikely that science would have flourished so remarkably as it has in our country and throughout the world during the past 50 or 100 years if men had been educated in the sciences and supported in their research primarily to improve our standard of living.

It is generally conceded by students that freedom of inquiry, under the guidance and discipline of scientific facts and principles, is the really important ingredient of scientific progress.

We often speak of the importance of free enterprise in our democracy; in science, free enterprise of inquiry is vital to the making and developing of discoveries, and the formulating of new principles. Where humanity seems to have benefited from science, the benefit is usually found to be a by-product—let's face it without shame! —of an intellectual game.

But what, one may ask, is to be said about the medical scientist, or the agricultural scientist? Are they not working so directly for human good that one can say that dedication to human advancement is their primary motivation? Certainly yes, where personal interest in the fields or other factors were not responsible for their choice of work. The important thing following the choice of field is, again, freedom of inquiry.

CAN APPLICATIONS BE HASTENED? . . . If freedom of inquiry and other necessary conditions for good scientific work prevail, how can the fruits of science be applied more promptly and effectively in industry?

Prior to Pearl Harbor there were many laments, expressed by numerous writers, concerning the long time lag between scientific discovery and industrial utilization. Hundreds of examples have been given. One is mentioned in the first paragraph of this discussion.

Another is the photoelectric cell or "electric eye," which, as every industrialist recognizes, is the key component of many a regulating or measuring system. The first photoelectric cells (ca. 1910), made by such physicists as Arthur L. Hughes, were created in the laboratory to study the phenomena of emission of electrons by the action of light, e.g., to check the correctness of the Einstein photoelectric equation.

The electric eye did not become of extensive industrial importance until the late twenties! This was not the fault of the physicists working in the field of photoelectricity; if they had diluted their efforts with application problems — and, possibly, become wealthy in the process—science would have suffered a real setback. The fault probably lay in the paucity of suitably educated technical men in industry.

It is now obvious, although there

was a time years ago when it was not so obvious, that each industrial research team should be guided by one or more imaginative, able men who have been educated in the relevant fields of science, and are capable of following the developments in those fields. These men should have an education, including research experience, which is almost the same as that of scientists, except that they should be schooled to become "generalists," instead of "specialists."

To-day, fortunately in most respects, the time lag between discovery and application has been greatly reduced. The reader is as familiar with the more world-shaking examples of this as the writer, so the matter of illustration won't be burdened here.

HOW INDUSTRY CAN ENCOURAGE SCIENCE . . . If it be granted that industry regards science as a good thing, to be fostered by financial support, how best can industry encourage the education of scientific personnel and aid scientists in their work?

Clearly, the industrialist should adopt a very long-range view and be willing to arrange for financial aid, without "strings." Fellowships of the ordinary sort help graduate students to complete their education and to receive their degrees, but the unhappily all-to-common stipend which requires the science student or professor to perform specific investigations in behalf of the donor is not as good as an outright grant, given without even a hint concerning what field might be of most interest to the donating industry.

It is very encouraging to note that certain industrial organizations have substantially increased their support of university research. In spite of this, however, private sources of income for the universities have not kept pace with the increasing cost of scientific research—the powerful new tools of research needed for progress in to-day's frontier land (cyclotrons, nuclear piles, etc.) are fabulously expensive.

Accordingly, there is increasing pressure toward federal support of science (exclusive of funds for the defense effort). With the justification that the scientist works for our common good, can any governmental body appropriate funds for university research and grant the scientist freedom of inquiry?

HOW SCIENCE AIDS INDUSTRY . . . In the foregoing we have referred to science in its pure and desirable form. This discussion would be incomplete if it failed to emphasize the great importance to pure science and industry alike of certain discoveries made during the course of industrial research.

This brings us back to our earlier remark that industrial research should be guided by men who have been suitably educated in the appropriate fields of science—"scientific generalists" or "industrial scientists"—because discoveries of great significance are usually made by men who have advanced themselves beyond rule-of-thumb experience.

How does an observation become a discovery? The far-reaching significance of a simple observation might be lost even when the observer is a top-flight research man; but if such significance is to be caught, it will be captured through the knowledge, experience, insight, imagination and creativeness of the observer.

Consider the discovery, in 1927, of the wave nature of electrons by Davisson and Germer, physicists at Bell Telephone Laboratories. The simple observation which, through their minds, led to a discovery of tremendous significance, would probably have been brushed aside as an irritating discrepancy in the normal course of work of less astute men.

Industry has been aided by developments and discoveries in science through utilization of phenomenological information, theories, principles, tools of research, new forms of matter, new compounds and materials, and the like. Are there other ways in which science can aid industry?

What about the "scientific method"—can it be used in industry? When discussing the scientific method among themselves, some scientists aver that there is nothing unique about the method with regard to thinking, planning and working. An eminent physicist, P. W. Bridgman, states that in working on a scientific problem, as in the tackling of any kind of problem, one does the best job he can, utilizing the best available means, with, as he emphasizes, "no holds barred."

It is taken for granted that the investigator is honest, "open-minded," and schooled in the avoidance of the common errors of logic; and that he will subject all his ideas and theories without bias to all crucial tests, however threatening the outcome might be to his "pet" ideas—to the end that his theories will become suitably modified, or even abandoned and replaced with new ones.

But don't we find these same good traits in the better technical men in industry? If here and there we find an old-timer riding a theory about a vagary of a paper machine to the point of exhaustion, perhaps it is because paper machine problems are extraordinarily difficult, and in our general state of ignorance we can't always formulate experimental programs that lead to sound theory.

The so-called scientific method can and should be used on problems of the pulp and paper industry. A fair number of scientifically educated young men have gone into the industry, and it seems reasonable to ascribe a good share of the progress of recent decades to this fact.

Sees "Gray Market" In Printing Paper Imports

Offerings and actual import of European printing papers are at prices so high as to justify a suspicion of a gray market in these papers at a time of United States shortages, according to Warren B. Bullock, manager of the Import Committee of the American Paper Industry. Imports of Austrian newsprint were entered at from $151 to $152 per short ton, and German standard newsprint at $180.

"JUST DROPPED IN TO SAY HELLO." (l to r) ROY NEUBRECH, Asst. Director for Pulp & Paper, BDSA of Dept. of Commerce; BUFF NATWICK, Res. Mgr., East Texas Pulp & Paper Co.; WALLY PEDERSON, Program Executive for Paper; WILLIAM T. JONES, Project Executive for Raw Materials and JOHN MUTZABAUGH, Industry Analyst for Converted Products. Mr. Natwick, formerly NPA Director for Paper Division, dropped in at Dept. of Commerce to say "hello" to former associates. (A P&P Photo.)

National Safety Council Honors Pulp & Paper

● PULP & PAPER has been awarded the 1955 Public Interest Award of the National Safety Council for "exceptional service to safety."

The award is made annually to public information media by the National Safety Council.

PULP & PAPER was the only magazine in all of the segments of the pulpwood, cellulose, pulp, paper, paperboard and pulp-paper products fields to be so honored.

It is one of only 32 "specialized magazines" to receive the award. In this entire field in the United States there are approximately 2,000 magazines, including, in the industrial field alone, over 600.

Constructive articles on new safety ideas, discussions of safety problems and reports on progress of safety work in the mills and plants in U.S.A. and Canada were considered by a distinguished board of judges.

The award also went to only 14 general circulation magazines. Other awards went to 42 newspapers, to 108 radio stations and 34 TV stations, 3 radio networks, 2 TV networks, 20 outdoor and transportation advertising companies and 2 transit systems.

FOR LEADERSHIP . . . "Influencing human behavior is the most difficult and the most important part of accident prevention," said Ned H. Dearborn, Council president. "The only way to reach people is through public information media, and their wholehearted cooperation has played a vital part in the progress of the safety movement. We are proud to honor the outstanding safety leadership represented by these awards."

Judges of the award were George A. Brandenburg, Chicago editor of Editor & Publisher; Robert R. Burton, vice president, Needham, Louis and Brorby, Inc.; Hugh Curtis, editor, Better Homes & Gardens; Norman Damon, vice president, Automotive Safety Foundation; Fred Garrigus, manager of organizational services, National Association of Radio and Television Broadcasters; Wesley I. Nunn, advertising manager, Standard Oil Co. (Ind.), and Dr. Albert A. Sutton, professor of journalism, Medill School of Journalism, Northwestern University.

NATIONAL SAFETY COUNCIL

425 NO. MICHIGAN AVE.
CHICAGO 11, ILLINOIS

April 25, 1956

Mr. Albert W. Wilson
Editor
Pulp & Paper
Miller Freeman Publications
1791 Howard Street
Chicago 26, Illinois

Dear Mr. Wilson:

Congratulations!

It is a real pleasure for me to inform you that your organization has been voted the National Safety Council's Public Interest Award for 1955.

We here at the Council have been well aware of all you have been doing for safety, and we are delighted that the judges agreed.

I am sure you feel, as we do, that there is another, less tangible result of your safety efforts -- the knowledge that you have helped prevent many accidents.

Many thanks for your splendid support.

Sincerely,

Ned H. Dearborn

Ned H. Dearborn
President

THE LUMBERMAN Gets Safety Council's Award

THE LUMBERMAN, like PULP & PAPER, a nationally and internationally circulated Miller Freeman Publication, is also one of the 32 specialized magazines which are honored recipients of the 1955 Public Interest Award of the National Safety Council.

The editor of THE LUMBERMAN is W. E. Crosby, the dean of forest industry editors of America. The magazine was founded in 1889. It became a Miller Freeman Publication in 1912, at which time Mr. Crosby became associate editor. For 40 years—since 1916—he has been the editor.

Albert Arnst is managing editor and regional editors serve in major logging and lumber producing areas of the continent.

Scott's Chester Mill Wins Class A Safety Award

Scott Paper Co.'s Chester, Pa. plant has won the Award of Honor of the National Safety Council for lowest injury frequency among 55 Group "A" mills entered in the Pulp and Paper Section of the Council's 1955 contest.

The plaque was presented to Robert I. Thieme, assistant plant manager at Chester, by Walter Matthews for the Council.

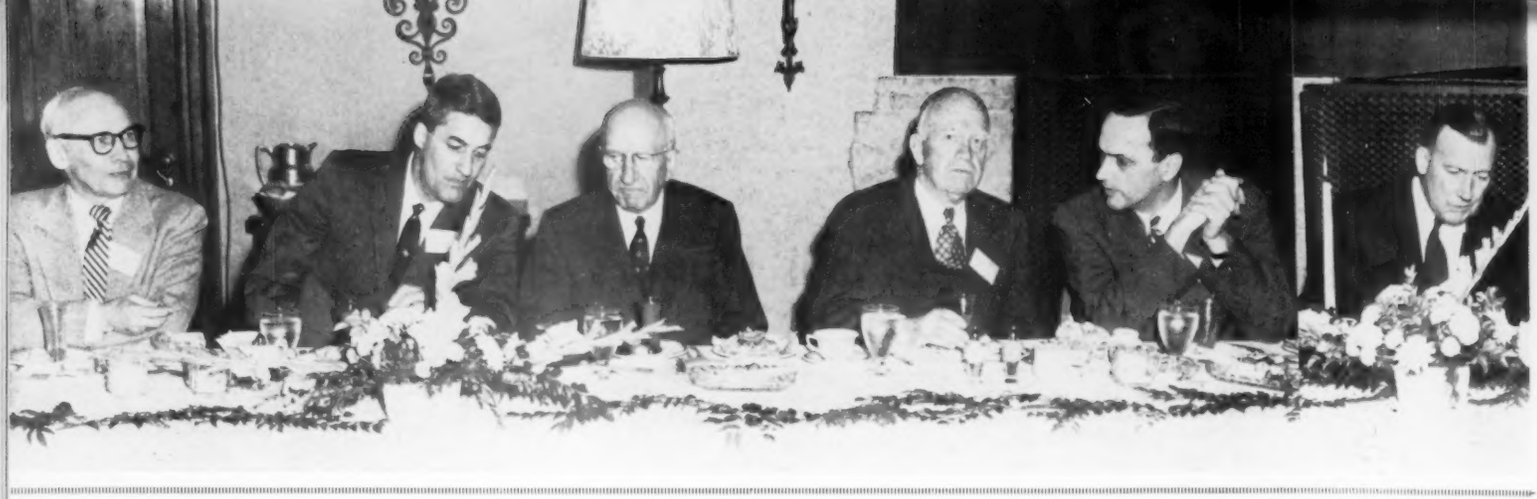
Others present included James N. Conaway, Scott's safety manager, and David B. Lansdale, Chester plant personnel manager.

Ga. Kraft Sets New Plant Safety Record

Georgia Kraft Co. at Macon, Ga., has surpassed its previous safety record of 1,042,415 manhours without a lost time accident.

The record is still continuing. The plant has now operated since June 2, 1955, without losing any time due to accidents. Company has been consistently below the national accident frequency rate for pulp and paper mills and also below the average for similar mills in the South.

In 1955, the average rate for Southern pulp and paper mills was 7.43. Georgia Kraft had a rate of 4.00 for this period. J. A. May, resident manager of the plant, attributes success of this program to cooperation between manager of production William M. Ebersole and safety supervisor W. M. Sloan, Jr., and to all other supervisors in the safety-conscious mill.



"Back-to-School" for Industry Men

Institute of Paper Chemistry launches "adult" course. Asks $735,000 for more space and facilities.

● At a time when "back-to-school" movements are in vogue for business men, with courses by Harvard, Michigan, Northwestern and other schools, the Institute of Paper Chemistry has come up with its own special version of adult education for men of more than five years' experience in this industry.

"Our First Industry Seminar can easily become one of the most significant services of the Institute of Paper Chemistry to this industry," declared John G. Strange in his first annual report as new president of the Institute, before the 20th annual Executives Conference in Appleton, Wis., in early May. He indicated this forthcoming event at the Institute—June 18-July 13—may be setting an important new pattern.

How importantly this is envisaged was further indicated when Edwin W. Schoenberger, dean of students, devoted an entire talk to "the need" for continuing adult education.

Two years ago PULP & PAPER exclusively reported that Institute leaders were beginning to consider a program to bring industry men "back to school again" for short periods. Much advance planning and discussion has gone into the program to be initiated this month at Appleton.

WATER PROBLEMS CHOSEN . . . "Water derived problems of the pulp and paper industry"—that's the subject chosen. Extremely broad, it will relate and integrate various sciences for the "back-to-school" industry men. Watershed management, aquatic biology, forest growth, wood chemistry, pulping, bleaching, papermaking, etc., will be involved. A maximum Institute staff of instructors will be on hand.

Applicants must be male employes of one of the 130 companies which are members of the Institute (and which make, incidentally, about 85% of the nation's pulp and paper). For $750, tuition, housing, breakfasts, group dinners and field trips will be covered.

PRESIDENT GREETS MICHIGAN MEN (l to r): G. B. BONFIELD, Vice Pres. and Gen. Mgr., and W. S. GODSPEED, President of American Box Board Co., are welcomed by President JOHN G. STRANGE of the Institute.

ANOTHER TREND—TO REACH SCHOOL TEACHERS . . . Another important new trend at the Institute, sparked by the shortages of young scientists and engineers who are entering this industry, was disclosed in plans of the Institute to intensify its relations with other institutions. Vice President Harry F. Lewis stressed this trend in a talk on the Institute's relations with educational and professional organizations.

He especially cited a Crown Zellerbach financially sponsored Summer Conference for High School Science Teachers at Oregon State College, July 9 to Aug. 3, and a similar summer teachers' conference sponsored by Marathon Corp. at the Institute. There will be 21 other such conferences in U.S.A., including sessions for chemistry teachers at Indiana University, Montana State College, etc.

"But only 1,000 of 75,000 high school science teachers will be touched," said Dr. Lewis.

He urged pulp and paper companies to sponsor such conferences in their areas, because "only 2½% of youngsters now taking general chemistry will follow it as a career."

NEW CONSTRUCTION PROGRAM . . . Institute finances and future money problems also highlighted the Executives Conferences, with the new president, Mr. Strange, announcing trustee-approved plans for a $735,000 program to add 37,000 sq. ft. of building space for "desperately needed" additional research and educational space and facilities.

"We hope these funds can be con-

"PORPOISES OF FUTURE WILL HERD FISH—NIGHTS WILL BE MADE TO GLOW—HURRICANES WILL BE CONTROLLED—"
Institute trustees sat at head table as man in the middle told of these wondrous prophecies of world of the future. (Left to right) HARRY F. LEWIS, Vice Pres. of Institute; HERBERT T. RANDALL, Vice Pres., Champion Paper & Fibre Co.; KARL E. STANSBURY, Chairman of Thilmany Pulp & Paper; SYDNEY FERGUSON, Chairman of The Mead Corp.; JOHN G. STRANGE, Institute President; Dean ATHELSTAN F. SPILHAUS, Institute of Technology, University of Minnesota, who forecast new controls of world resources; ERNST MAHLER, Chairman of Institute Trustees; DONALD S. LESLIE, President, Hammermill Paper Co.; W. IRVING OSBORNE, JR., President, Cornell Paperboard Products; ALEXANDER CALDER JR., President, Union Bag & Paper Corp.; D. K. BROWN, Chairman, Neenah Paper Co., and President DOUGLAS KNIGHT of Lawrence College.

tributed by company members of the Institute," he said.

How important industry leaders regard the Institute's future was shown when two trustees, President David Luke, Jr., APPA national president and president of West Virginia Pulp and Paper, and George E. Dyke, board chairman and president of Robt. Gair Co. Inc., flew into Appleton for just the 3-hour evening trustees meeting under Chairman Ernest Mahler, which preceded the two-day program.

MORE "DORMS" NEEDED . . . Mr. Strange reported six new dormitories for married students have been occupied by 24 couples and children, but that another $51,500 unit is needed "as quickly as possible" and, ultimately, ten more such units will be required.

Some member companies have agreed to a special 8% surcharge to be earmarked for the "tuition" portion of scholarships. Under a new scholarship payment plan, scholarships for single and married students will range from $2,000 to $2,100 and for married students with children from $2,500 to $2,600. Increases were approved because of costs and competition among industries for students. "The shortage of manpower is most critical," he said.

127 RESEARCH PROJECTS . . . Cooperative research is being conducted at an annual expenditure of $1,500,000. There were 99 projects a year ago. Sixty new ones were added; 127 are now active. About 27% are for member companies, 50% for group endeavors, 11% for allied industries and 12% for government or defense agencies. "The projects are more profound and difficult than 15 years ago," said Mr. Strange.

The Institute staff now totals 257, not counting about 20 who worked only in summer. About 25% of their time is spent on institutional research. Important were projects to improve analysis methods and measurement, new techniques in chromatography, radio chemistry and adsorption phenomena. The staff published 50 scientific papers in the year and 25 more "are ready to go."

Operating expenses for 12 months were $1,700,000, and the Institute intends to continue operating on a balanced budget.

About 150 delegates from several countries are expected to attend the Third Lignin Round Table in September at the Institute.

WORD OF CAUTION . . . Mr. Strange wound up his talk with a caution against "too much slavish devotion to systems, yardsticks, methodology"—the "bureaucratic mind" and "science cults" that "stultify creativeness and constructive evolution." He said he wishes for growth of the Institute to be shown "in character and contribution rather than an end or a dogma."

Mr. Mahler had remarked on the first absence from the conference of Westbrook Steele, former president, who had headed the Institute for 25 years, and is recovering from illness in Florida. Mr. Strange, who worked under his "tutelage" for 23 years, mentioned Mr. Steele's "decisive role in the Institute's origin and growth."

RECORD ENROLLMENT . . . PULP & PAPER learned that student enrollment at the Institute this spring was the largest third term enrollment since before World War II. There were 45 graduate students enrolled, of which 21 already had master's degrees and were working for doctorates. This is the largest number ever working for ph.d.'s in the Institute's entire history. Tere will be about 55 students enrolled in the fall term.

FACULTY PANEL . . . After Dean Whitney's address, a faculty panel brought out how the Institute prepares students with a "solid foundation" for whatever specialization is demanded of them later on.

Moderator Harry Lewis, himself a ph.d. from Illinois, class of '16 said "four points the Institute stresses in training graduates is they must be taught to understand principles underlying processes, must be able to compare critically their company's processes and products with those of its competitors, must be able to analyze their particular problems and, finally, must be able to apply sound

GREETING A NEW COMPANY PRESIDENT (l to r): K. A. TAYLOR, Director of Research (Glens Falls, N.Y.), International Paper Co., WILLIAM E. BUCHANAN, President of Appleton Wire Works, and JOHN REEVE, Vice Pres. of Appleton Coated Paper Co., greet ALEXANDER CALDER JR., who recently succeeded his father as President of Union Bag & Paper Corp.

"WHY DO WE EDUCATE GRADUATES?" Institute panel batted this subject around at the Executives Conference (l to r): KYLE WARD and J. A. VAN DEN AKKER, Research Associates; H. F. LEWIS, Vice Pres.; B. L. BROWNING and R. E. KREMERS, Research Associates, and MALCOLM N. MAY, in charge of Pulp and Paper Making Section. Answers to the question to educate students to be able to (1) understand process principles, (2) make critical comparisons with competitors' processes, (3) analyze particular problems and (4) apply sound reason to solutions.

HOW ARE STUDENTS' GOALS AND PLANS SHAPED AT INSTITUTE? Institute staffers and students comprised this panel (l to r): J. E. (ED) TODD, Dean of Admissions; A. C. (CHUCK) EAMES, student from Maine; T. A. (AL) HOWELLS, Research Associate and Institute graduate; ED W. SCHOENBERGER, Dean of Students; DON E. MARTH, student from Illinois, and ED E. DICKEY, Research Assistant.

reasoning to their solution without being influenced by preconceived bias."

Some quips and observations by his colleagues:

Malcolm May: "The objective of the academic program is to develop technical leadership for the pulp and paper industry."

B. L. Browning: "We used to say the doctorate was not really conferred until the machinetender began to call the graduate 'Doc' as a token of liking and respect."

Kyle Ward: "The ability to analyze a problem, define a program of study and develop final proof in independent research—these experiences our young doctors will undergo many times again in the industry."

J. A. Van den Akker: "But it is unrealistic to say we prepare graduates for research. What about the nine who are vice presidents, the 30 who are managers, the six who are superintendents, the 19 who are technical directors? Of 122 ph.d.'s, only 55 are in research."

Dr. Browning: "But the veeps and t.d.'s, etc., are constantly applying the technics they learned as researchers: (1) study all facts from others' experience, (2) review underlying basic principles, (3) develop a solution, and (4) verify it experimentally."

Roy E. Kremers: "The pattern still functions. Any man in research or operations worth his salt is constantly storing away facts, etc., rationalizing and generalizing. A spot decision may seem wholly empirical and arbitrary. Actually, even unconsciously, he is making an effort to relate theory to practice."

HOW STUDENT PREPARES FOR PH.D. . . . This is how an Institute student "prepares" for more research. He is first assigned a number of complex problems in order, he reviews literature, he sets up a hypothetical program of attack, he prepares a logical description of background and programs, he makes an oral presentation, followed up by extensive discussions with faculty.

"Evaluating features" of this program take the place of the usual doctorate qualifying examination in other universities.

Dr. Van den Akker, chairman of the thesis committee, told how a student is gradually given more freedom in selecting studies in second and

INTERNATIONAL INCIDENT (l to r): GEORGE BANTA JR., Pres. of George Banta Co., publishers; GEORGE F. UNDERHAY, Research Director, Bowater Paper Corp., London, who had just visited Bowaters U.S.A. mill in Tennessee; and T. E. ORBISON, Appleton Consulting Engineer.

RESEARCH AND/OR MONEY—PET TOPICS. HERBERT T. RANDALL JR., Vice Pres. who heads up research and engineering for Champion, chats with RUTH SHALLCROSS, Economics Consultant and Lecturer at the Institute, author of articles for PULP & PAPER on pulp and paper in foreign trade.

A NEWCOMER MADE WELCOME (l to r): ELMER (JENX) JENNINGS, President of Thilmany Pulp & Paper Co.; ZINN GARRETT, who recently joined Institute as Assistant to President after a career in Europe with U.S. State Dept., and KARL E. STANSBURY, Chairman of Thilmany.

third year, and then is free to choose the thesis he wants—"not some assigned section of a professor's problem." Unlike in most other schools, the student's thesis is his free choice and is not a joint product of a faculty man and student—he is sole author.

The "broad perspective and liberalizing experience" of an Institute ph.d.'s training also was contrasted with "the confining experience of a traditional graduate school."

POWER OF THE WEAKER SEX . . . Next came a panel of students and faculty, to discuss how students are recruited, how they respond to the academic program, their student activities and how their goals are shaped. Students Dean Schoenberger was moderator, J. E. Todd, dean of admissions, Al Howells, Institute graduate of 1937, and Ed Dickey were other faculty participants.

How fate has played a role in drawing young men to pulp and paper was revealed by both student panelists. Don Marth, from Oak Park, Ill., was attending St. Lawrence College when his fraternity house-mother came back from a tea at the Institute, full of enthusiasm, and talked him into applying for entrance. The distaff side also influenced A. C. (Chuck) Eames, whose name appeared in his home town paper in Maine when he returned from Rensselaer Polytech. A paper mill research director's wife read the item, and got her husband after him. Chuck accepted a mill job —later entered the Institute.

Ed Schoenberger told how only four out of 50 student chemical engineers at a recent regional recruiting meeting said they had any knowledge of the paper industry!

TOUGH COMPETITION . . . Another case—a chemistry professor attended a conference in Appleton, got interested in the Institute, persuaded his best student back home to apply. The odds are against this industry—the Institute sends announcements to 500 schools, hoping a relatively few will post them on bulletin boards. They compete for space with announcements from scores of other graduate schools and industries.

"I seldom visit a campus that I don't see a large number of recruiters from other industries," said Dr. Todd. But some things are changing. He said this fall 60% of Institute students will have had mill experience—it used to be 15%.

Young Eames told how at Rensselaer, many companies posted employment ads on a large bulletin board, but he never saw one for a paper mill.

A New Dean Tells Industry His Plans

• A "Down East Yankee" from the Pine Tree State is new dean at the Institute of Paper Chemistry.

Dr. Roy P. Whitney, in his very early 40's, has been on the Institute staff for nine years. He steps into the shoes figuratively worn by Dr. Harry Lewis since 1933.

With a pledge to "remain faithful to the original concepts of the Institute," Dean Whitney frankly conceded that he did not know what "the Institute of tomorrow" would be like. "But it will continue to change, not in a rapid and irresponsible manner, but steadily and deliberately, reflecting our best efforts to discern the needs of an industry," he said.

This was his "maiden speech" before the 20th Annual Executives Conference in Appleton, Wis., as he took over the duties of Dr. Lewis, who continues as vice president of the institute, but free now to devote full time to his virtual one-man crusade for winning more science students to pulp and paper careers.

Dr. Lewis, a "young" 65 years old May 27, "the man with the perpetual smile," will intensify his liaison and advisory work with colleges from coast to coast, as chairman of the division of chemical education of the American Chemical Society. He also serves on the chemistry panel of the National Science Foundation which allocates millions of dollars of government money in educational grants every year.

HIS PROGRAM . . . Dean Whitney promised that the Institute will aim to turn out graduate students for this industry "equipped with ability to think for themselves and meet new situations in terms of broad concepts rather than dated formulas . . . men who will be capable of exercising leadership over the broad base of the industry activity and interest."

He discussed two problems the Institute continually faces: (1) the relative advantages of generalization vs. specialization in the graduate program, and (2) the motivation which induces a student to undertake graduate work.

There's no simple answer to the first problem, as the industry needs "many gradations of specialists and generalists." The Institute for years was unique among schools in its approach, he said. A panel later showed how the Institute simultaneously focuses on a particular broad industry, actually specializing less than most graduate schools.

DEAN WHITNEY—"We will remain faithful to the original concepts of the Institute. But it will change, steadily and deliberately, reflecting our best efforts to discern the needs of the industry."

The answer to the second problem of student motivation was implied in the picture he painted of the kind of man the Institute seeks to turn out. It is important, he said, to "steep students in principles and fundamentals that will equip them to develop the techniques and technologies of tomorrow." The "climate" in which they work—the "professional and not vocational" character of the faculty also are important. At another point, he said: "Research is a mechanism for education—not an end in itself."

HIS CAREER . . . The new dean was born in Milo, Me. He spent 10 years at M.I.T., learning, teaching, and on loan for four war years to the Chemical Warfare Service, on duty at M.I.T. He received a War Department award for his work. He earned his b.s. in 1935, his master's in 1937, his ph.d. in 1945, all in chemical engineering.

He left M.I.T. in 1945 to be head of the Departments of Industrial Cooperation and Chemical Engineering at University of Maine for two years. He finally left his native New England for the Institute in 1947 and has been head of its Chemical Engineering Dept. In 1948, he was one of two winners of American Institute of Chem. Engineering awards for best original contributions by men under 35.

He is married; has two children.

A 3-week orientation program for Institute students was described. Tests show students' strengths and weaknesses. Some need more chemistry, calculus and engineering, but it takes time to make them understand they will be educated on "the graduate level to be a generalist."

The panel brought out there is no actual "average" Institute student. This year they were from 19 states, Canada and India, from 38 different colleges and universities, 27 were married and apparently many of the 18 bachelors were not long for that life. They go in for all kinds of sports and extra-curricular activities, which are encouraged. Graduates feel they are equipped for a wide range of work in the industry.

"UPS AND DOWNS" OF THESIS WORK . . . At the next day's session three students told of the thrills, frustrations, and disappointments experienced in development of a thesis.

Richard Cordingly, from Colorado U., said picking a thesis was "similar to picking a wife. You better like the subject or by the time you finish, you will wonder why you ever wanted it." He first chose "formation and structure of sugar sulfonic acids produced during sulfite pulping" but experiments and faculty advice finally persuaded him to choose only a phase of the subject.

ClO_2 PROBLEMS . . . Roger A. Somsen, who worked at St. Helens, Ore., division of Crown Zellerbach and was a U. of Wisconsin graduate, told how his interest for a thesis was aroused in little known reactions of aqueous chlorine dioxide solutions with carbohydrate "model" compounds. He really had a raft of problems! ClO_2 can explode violently, so he had to keep concentrations low. He solved his corrosion problem by using glass, but for connections he used Teflon, because of its inertness. He still has problems, he said.

BENEFITS INDUSTRY . . . Then came Leo J. Bernardin, from Lawrence, Mass., and Tufts College.

In 2-phase pulping of dissolving grades, the prehydrolysis-sulfate process, carbohydrates, other than cellulose, amounting to one-fourth of the wood, are partially removed by weak acid treatment at high temperature with least harm to desired cellulose. Eventually, this gives a dissolving, not a paper pulp. The phenomenon is known—what Leo is after is to find out how the carbohydrate chains are broken down and removed. This got him into four months of "unexpected work." He found it a problem to stick to his goal, avoiding unuseful work. This kind of research may benefit industry, he said, by freeing future design of pulping processes from trial and error.

TRIBUTE TO LEWIS . . . Dr. Lewis then followed with his talk on the stepping up of relations between the Institute and other universities and colleges and associations, for the ultimate benefit of the industry and development of its manpower needs.

His speech over, Dr. Lewis was not permitted off the platform. A complete surprise to him was the next event—presentation of a TV set to him and his wife by Institute students and alumni. Though stepping down as dean, he expressed the hope he will continue to have many contacts with them. Leo McDonnell, a U. of Alberta grad who worked 5 years at M&O's International Falls mill, presented the gift. He said Dr. Lewis had been "their teacher, counsellor and friend for 25 years."

SOME OF 230 INDUSTRY EXECS GET THEIR PROGRAMS (l to r): GERMAN EMORY, Chairman of Board, Riegel Paper Corp.; DR. KENNETH A. ARNOLD, Tech. Director, St. Regis Paper Co.; WARD D. HARRISON, Vice Pres. and Gen. Mgr. of Production, Riegel; the Institute twins—MISS MARQUITA BESAW and MRS. ROY (MARGARET) BEATTY, Secretaries, and HARRY F. LEWIS, who continues as Vice Pres., but retired as Dean, of the Institute.

Fish-Herding Porpoises and Use of Rock for Power Foreseen

"An explosion of world engineering" will greatly enhance man's mastery over his environment in the next 50 years, on a much greater scale than the hydrogen bomb developed for his destruction.

More than 300 executives of this industry and guests at the dinner session of the Institute of Paper Chemistry's Executive Conference heard this forecast by Dr. Athelstan F. Spilhaus, Dean and Professor, Institute of Technology, U. of Minnesota.

"If the speculations which I will share with you come about, the fraction of every man's time over which he is master will continue markedly to increase," he said. Then he envisaged these future wonders:

Men will talk with porpoises as to their dogs, and train them to herd fish as collies herd sheep.

Rocket-type radioactive scows will shoot atomic wastes off the earth into space.

Treatment of hurricanes to control them in formative stages.

Stimulation of night air glow with nitric oxide to achieve illuminated night skies.

Use of half our common rock for power. Abundant nuclear power can raise living conditions in nations poor in resources now, and reduce tensions.

Simple solar cookstoves to replace cow dung fuel used for cooking in India and Africa.

Periodic interruption of seasons by artificial heating or stored sunshine.

Enclosure of huge areas in intemperate zones for growing food. Enclosed arid regions to prevent loss to open atmosphere, so it can be re-used.

Seven New Members Join Appleton Institute

In the past year, seven new company members joined the Institute of Paper Chemistry, this industry's graduate school. The latest to join are listed first (the first four joined in early 1956, the other three in late 1955):

East Texas Pulp & Paper Co., Evadale, Tex.

Missisquoi Corp., Sheldon Springs, Vt.

Southern Chemical Cotton Co., Chattanooga, Tenn.

Rochester Paper Co., Rochester, Mich.

St. Lawrence Paper Corp., Norfolk, N.Y.

Shawano Paper Mills, Shawano, Wis.

Kansas City Star Co. (Flambeau), Park Falls, Wis.

What with reductions caused by various mergers, the membership now totals 130 companies. They make about 85% of all pulp, paper and board made in the U.S.A.

Introduces New ClO_2 Process to America

• First new chlorine dioxide generating process of its kind on this continent will be watched closely when it makes its debut at Brown Co., Berlin, N. H. this month.

In Brown Co's. new 150-ton a day kraft pulp bleach plant, ClO_2 will be made by the Day-Kesting process; developed simultaneously but independently by Dr. George A. Day, Brown's technical director, and Dr. Edelbert Kesting of Munich, Germany.

"This process uses only chlorine and electric power as raw materials," Dr. Day explained to PULP & PAPER, "eliminating purchasing sodium chlorate as in other processes for production of chlorine dioxide."

"Initial installation cost of the Day-Kesting process is admittedly higher than other methods of making ClO_2," he commented, "but thorough studies we have made show that savings in manufacturing ClO_2 will far offset the original outlay. These studies show that with all costs included, we will be able to produce chlorine dioxide for about half of what it would cost by any other method."

HOW IT WORKS . . . The Day-Kesting process is based on a series of electrolytic cells and a set of cascade reactors. Sodium chloride in solution in cells is converted to strong sodium chlorate. Sodium chlorate moves to the reactors where hydrochloric acid is introduced. Resulting reaction gives off ClO_2 in gas form, at the same time changing sodium chlorate back to sodium chloride.

The chlorine dioxide gas is absorbed in water for use in bleaching.

Solution from the reactors (sodium chloride plus some residual sodium chlorate) is returned to the electrolytic cells, where it is reconverted into strong sodium chlorate to begin the cycle again.

Hypochloric acid for the process will be furnished direct by pipeline from Brown's chemical plant.

EQUIPMENT . . . Brown Co. has built the vital equipment in the ClO_2 generating plant. Inasmuch as this is the first installation, there are no manufacturers of these major items. In the bleach plant, Impco has furnished the 8 ft. by 12 ft. washers, tile lined with Semtile by Stebbins. Instrumentation is by Foxboro.

Pumps were provided by Warren and Impco and motors by Westinghouse. Stainless steel fabrication is by Nelson Pipe Co. and transformers and switchgear by General Electric Co.

DR. GEORGE A. DAY, Technical Director, Brown Co., Berlin, N.H.: ". . . We will be able to produce chlorine dioxide at about half the cost of any other method."

PRESIDENT FAIR'S COMMENT . . . Pres. A. E. H. Fair of Brown Co., interviewed by P&P, says that there are additional savings. "Low cost chlorine dioxide will make possible simpler bleaching sequence, but at the same time will give better overall results in bleaching. In addition, there is less attack on the cellulose fibers in the chlorine dioxide process; there is higher yield and less waste. This treatment gives the whitest pulp possible with maximum permanence."

"What's more," explained Mr. Fair, "we will now be able to produce bleached kraft pulp by an integrated process which not only will provide an economic method of manufacture, but also will provide for consumption of both hard and softwoods to the best economic advantage. We will also be able to make higher grades of pulp and paper."

Dr. Day's process will be made available to other companies in the United States and Canada on a royalty basis. Sales agent is M. H. Treadwell Co., New York City. Robert M. Spitzer of Treadwell says that many American and Canadian mills are interested in the process and are closely watching the Berlin installation.

FOR SULFITE, TOO—IN GERMANY . . . Writing to PULP & PAPER, Max H. Schmid, who recently retired as president of Germany's big Waldhof Paper Mills, and now resides in Connecticut, told of the successful use of the Kesting process in Waldhof's Kelheim sulfite mill.

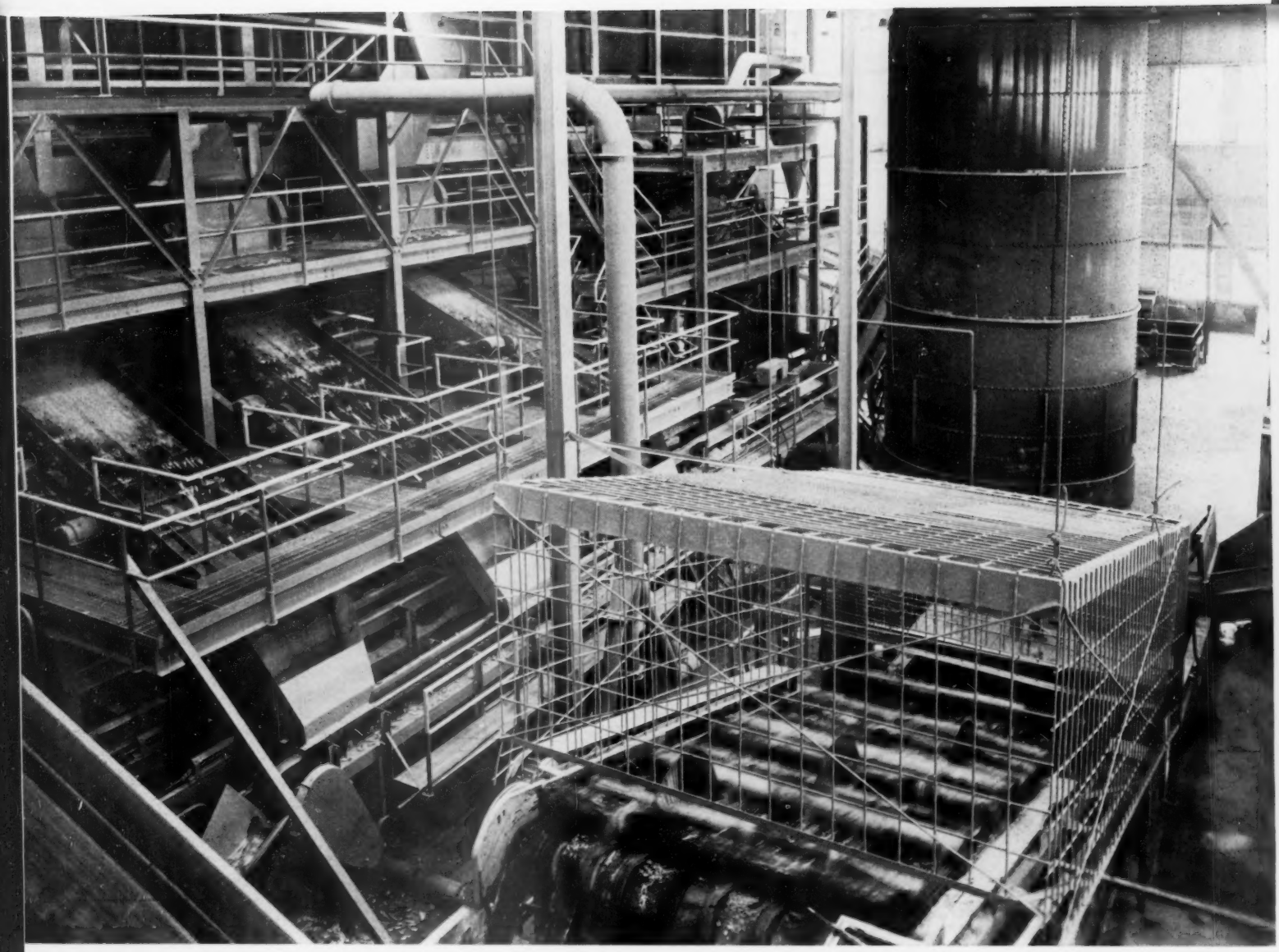
"It required higher investment than other processes but due to its extremely clever cycle, cost of operation is lower," he wrote. "This, of course, refers to its use in a sulfite mill," added Mr. Schmid.

"During the past year 71% of all collectible sulfite liquor was withheld from streams for utilizing or processing by the 20 member mills (in Wis., Mich., Minn., Maine, Wash. and Ore.) of the Sulphite Pulp Mfrs.' Research League. This is a gain over the 60% kept out of streams in 1954 and 52% in 1953." **STANTON W. MEAD,** League president and president of Consolidated Water Power & Paper Co.

"Canadians should take more interest in their own investments if they are worried about U.S. economic control of Canada. Instead of blaming the Americans for being so smart and courageous, why don't we study and imitate them with our own ventures? We hear the argument that Canada should erect prohibitive tariffs against any country that refuses to admit in volume products that some Canadians believe they can produce competitively. Canada, so dependent on foreign markets and upon machinery and special manufactures available only from highly industrialized countries supplying world markets, would be quickly the loser, if we followed their advice."—**H. R. MACMILLAN,** MacMillan & Bloedel, Ltd.

"St. Regis Paper Co. sales for this year, without Rhinelander, should reach $325,000,000 (compares with $257,000,000 in 1955), and net earnings should amount to $24- to $25,000,000 (compares with $19,000,000 in 1955). Rhinelander (now merged with St. Regis) had net sales of $21,643,880 last year and net income of $1,628,975. I have been informed that Rhinlander's net sales this year are estimated at $25,000,000 with net income over $2,000,000,"—**ROY K. FERGUSON,** president of St. Regis.

"Higher costs in relation to selling price for newsprint reached a point which caused us concern in 1955. Since 1952, the date of our last newsprint price increase, there has been a steady advance in basic costs, materials and freight. Despite the narrowing cost-price margin, we were able to improve earnings by heavy capital investment to speed up existing machines and by continuous full-capacity operation. . . . We have, however, about reached the end of this source of increased earnings."—**HAROLD S. FOLEY,** chairman of the board, Powell River Co.



FULL SWEEPING VIEW of interior of new wood preparation plant at Wisconsin Rapids is seen from top of barking drums. Above, from left to right, three chip screens, including a new one by Link-Belt Co. In foreground, saws under wire screen where logs are cut into 2-ft. groundwood bolts. Note take-off chute which takes logs off belt in picture at right, delivering them to these saws. Towering in back is first A. O. Smith glass-lined silo to be used for bark storage, as farmers use it for grain.

Wisconsin's New, Ultra Modern Wood Plant

• A bright and shining ultra-modern wood preparation plant, now in operation at Wisconsin Rapids, Wis., is a far cry from the dismal, dank, and inefficient oldtime woodrooms where a strong back and a peevee or pike pole were the principal operating "tools."

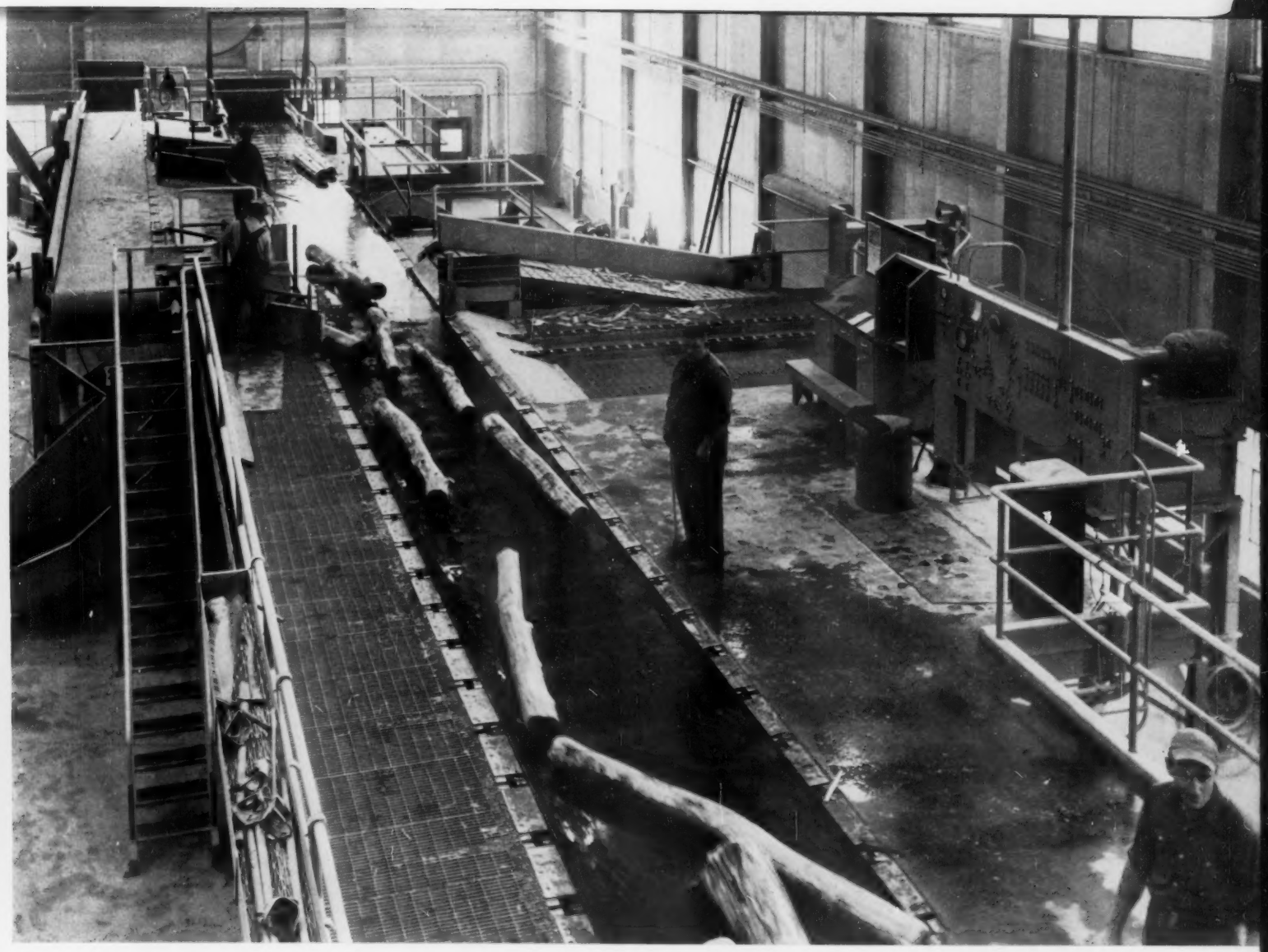
Consolidated Water Power & Paper Co. has invested $1,500,000 in a plant that is about as far removed from "the old Paul Bunyan days" as any yet built in this industry. Even to eyes which have seen many a postwar built woodroom, this is remarkably different and new.

The big 205 by 126 ft. steel building is sheathed in Reynolds aluminum panels with a Johns-Manville roof. Wisconsin Bridge & Iron Co. supplied steel.

Stepping inside the big airy, well-lighted plant, a visitor's first impression is its roominess and visibility. From almost any point on the operating platforms, every operation in the building can be seen. And the operations are many and varied, as required by a mill which uses spruce, balsam, hemlock, poplar, birch, and mixed hardwoods, and makes three kinds of pulp—groundwood, neutral sulfite (semi-chemical) and straight sulfite.

Where 125 men were formerly required, now only 38 are used on two shifts of 19 men each. Only 14 are actually in wood preparation, the other three are at the top of the sulfite mill chip bins and in the groundwood mill. Their average day's production is 130 cords for groundwood and 320 for chips. But they can speed up to a rate of 35 cords an hour.

IN THE WOODYARD . . . Consolidated's big woodyard at "The Rapids" stores 75,000 cords. Cranes used include two diesel electrics, one diesel, and one steamer; two American Hoist & Derrick Co. diesel electric cranes with Mack grapples place logs ranging from 8 to 18 ft. in length into the hot pond for removing dirt and softening bark. One is a new 50-ton crane,



DOMINATING THIS SIDE of Consolidated's 205 by 126 ft. wood plant is 5-ft. wide Manhattan rubber sorting belt, leading from barkers. At far end are two belts to two chippers. A take-off station permits simultaneous use of chippers on two species of wood. Central control panel is at right. One man here controls all operations except jackladder, saws and refuse system. Shown are four of five take-off stations—to left of belt for groundwood and second chipper; to right for splitter and culls.

Is a Far Cry from Days of Paul Bunyan

the other a 30-ton job. Wood comes by rail and truck from Lake States, Canada, even some from as far as Colorado.

The hot pond is 300 ft. long, 25 ft. wide, and 8 ft. deep. Water is circulated by pumps to move logs mechanically to jackladders, minimizing hand labor. The pond is warmed to 100° F. by the first such large-scale use of heat extracted from spent sulfite liquor. Hot water is extracted from the liquor through a DeLaval heat exchanger and brought 600 ft. to the sulfite mill, and returned after heating.

A boom stick lengthwise in the pond is used to separate 100-in. wood, but is pulled to one side to run hem-

Our Cover Picture . . .

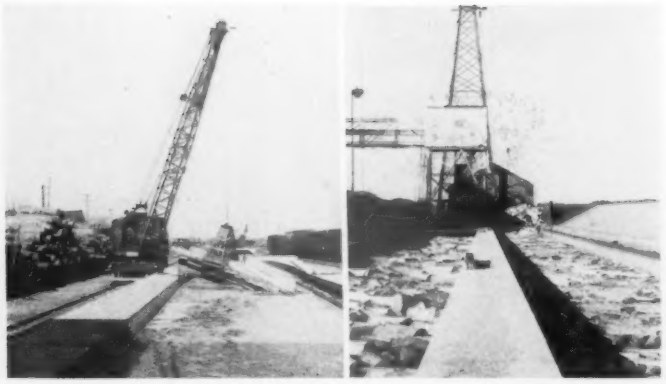
The picture of Consolidated Water Power & Paper Co.'s new wood preparation plant, on our cover, was taken from the top of the pulp mill at the Wisconsin Rapids mill.

The broad sweep of the hard-working Wisconsin River—where there are probably more tax-paying privately developed water power sites than on any other river in the world—is seen in this picture. Consolidated was responsible for several of the power sites, as are other paper companies.

In far background are storage rows of Consolidated wood, from Lake States, Canada and even some from Rocky Mountain areas.

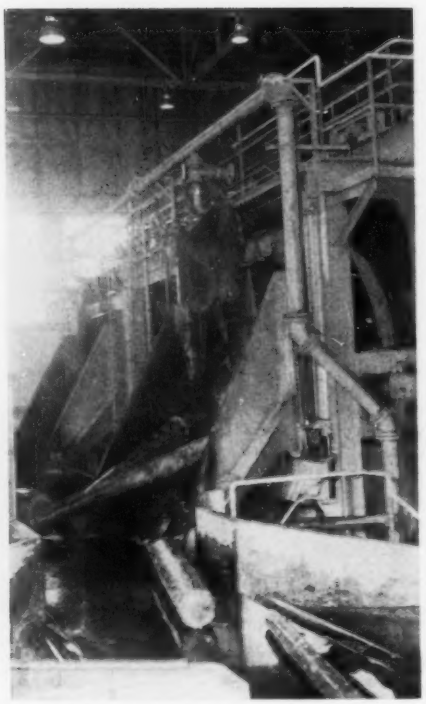
The plastic-coated steel tube in foreground is 8 ft. in diameter, housing conveyors for chips and barks plus a workman's walkway.

Chip storage bins are in the high portion of the building (60 ft. high). The lower portion (40 ft. high) is a well-lighted, remarkably open woodroom where virtually all operations are easily visible from many stations.

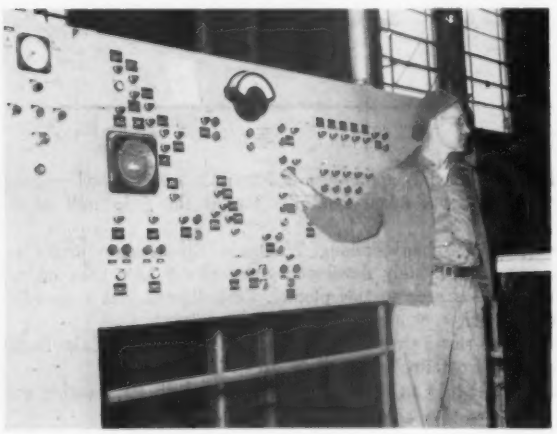


NEW HOT POND AND THE OLD ONE. (Left) 30-ton American Hoist diesel electric crane dumps hemlock logs into new 300 ft. long hot pond with Mack grapple. Industry's first pond warmed by sulfite liquor. (Right) Old hot pond, converted to storage holding pond for groundwood bolts, on way from new wood plant to grinders. In left channel are spruce bolts, in right aspen.

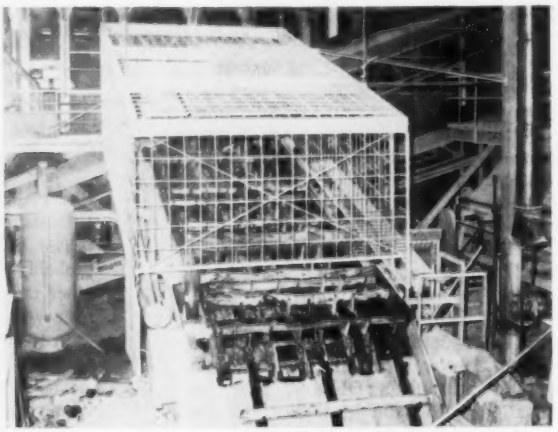
WHERE LOGS ENTER NEW PLANT. D. J. Murray Mfg. Co. jackladder operates in two halves for different species. Its saws cut hemlock logs over 2 ft. diameter into 4 ft. lengths for splitting. Other wood, mostly aspen, spruce, birch and balsam, is cut in 8 ft. lengths. Link Belt C-132 chain is used. Emerging from building at left is groundwood bolts conveyor. Beyond is some of conveyor tube for chips to chemical plup mill.



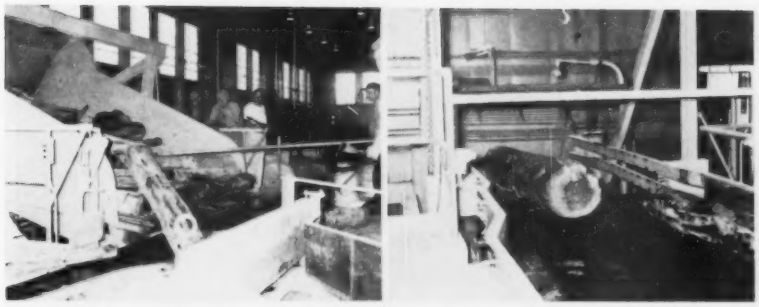
REMOTE-CONTROL GATES ON BARKERS. Gates on two Fibre Making Processes barkers in background are first of kind. A central control panel operator can open one or both gates, tumbling logs onto 5 ft. rubber belt.



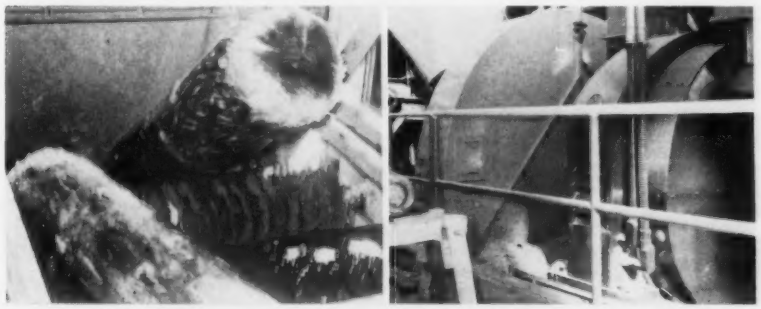
ONE MAN CONTROLS ALL OPERATIONS from time logs leave jackladder to chippers. Pushbuttons control all processing rates along a 160 in. belt, beginning with controlled gates on barkers to chippers at end of line.



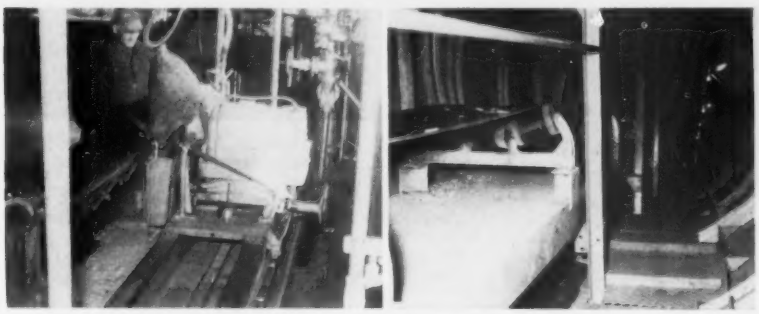
WHERE BOLTS ARE MADE for Consolidated's groundwood mill. Logs are being cut into 2 ft. bolts here. Barkers are in background.



FROM LOGS TO CHIPS AT "THE RAPIDS." (Left) Cull logs taken off main belt in big steel collector at left; they go back on belt when a chipper is in use for semi-chemical chips. Gate is closed to second belt and second chipper in this picture. (Right) Main Manhattan 5 ft. belt dumps logs into a main chipper chute. G.E. "electric eye" can instantly halt entire conveyor and close barkers' doors 160 ft. away.



(Left) Log is tumbling down chute to Carthage-Norman 110 in. chipper, and another is ready to drop. (Right) New Carthage-Norman helical-knife chipper with 1,000 hp General Electric synchronous motor.



(Left) Hanchett knife grinder keeps busy. New chipper's 12 knives are changed and sharpened every 8 hr. shift. (Right) Inside 8 ft. plastic lined steel tube is workmen's walkway and conveyors for chips and fuel bark. Small water and steam lines also are in this aerial tunnel connecting with pulp mill and power house.

lock logs. A pushbutton controls two 7,000 gpm pumps to bring wood to the D. J. Murray Mfg. Co. jackladder. The jackladder is 20 ft. wide, 35 ft. high, and weighs 80 tons. It removes wood from the pond at 10 to 90 fpm. Hydraulically controlled saws on the jackladder cut logs over 2 ft. in diameter to 4 ft. lengths for splitting. All wood under 24 in. diameter, mostly aspen (popple), birch, spruce, and balsam, is processed in 8 ft. lengths. Hemlock ranges from 12 to 40 in. in diameter. Bottom saws are 72 in. and top saws are 50 in. The ladder chains are Link-Belt's C-132 type.

There is a separate holding pond outside the new plant for groundwood bolts, routed there from inside the plant after wood is barked and bolts cut from the groundwood species. This was the old hot pond, 225 ft. long, 30 ft. wide and 8 ft. deep. Link-Belt belt conveyors carry the bolts to the groundwood mill.

FROM BARKERS TO CHIPPERS—NEW ARRANGEMENTS . . . Next step in the new wood plant is drum barking with two parallel Fibre Making Processes 12 x 45 ft. drums. Each has a 200 hp General Electric drive. The unusual feature here is the use of the industry's first remotely-controlled, air-operated gates, furnished by Fibre Making Processes, at the outgo end of each barking drum. Both can be tumbling logs on the big 5 ft. sorting belt at one time, or either gate can be closed. This is controlled at the central panel board.

The big belt, made by Raybestos-Manhattan, Inc., is a spectacular feature of the plant. It is operating on a platform about 10 ft. above the concrete floor. It runs almost the length of the building, on one side of the vast open room, from barkers to chippers. Of course, the belt must be a total of 320 ft. in length, as it carries logs half that distance.

The large interior general view of Consolidated's plant, which leads off this article, shows most of the belt at the right side of the room.

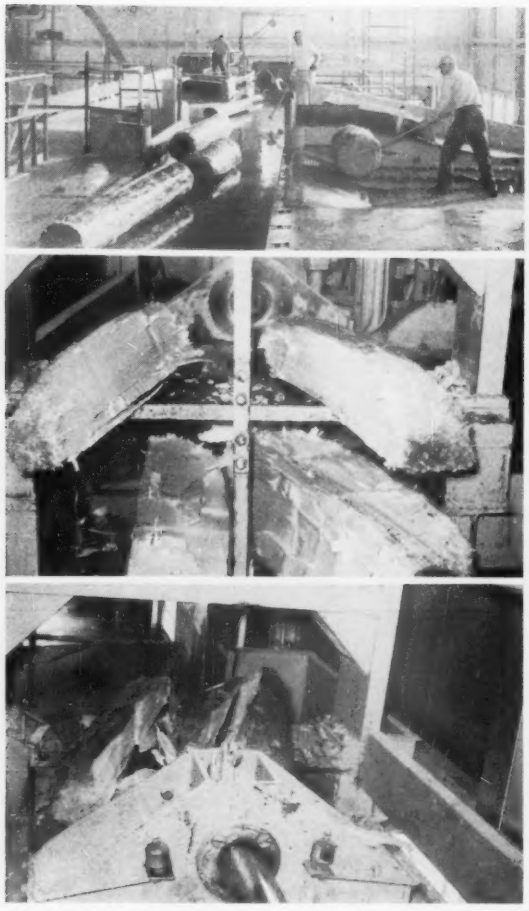
Going toward the chippers, the first take-off is on the right, used to return any logs insufficiently barked.

Following down the big belt, next on the right, is a spacious platform and here is the control board, where all the operations from barking onward are centrally controlled. One man is in charge and is the controller of all process rates along the belt. A few workmen at the take-off stations assist him. Consolidated's electrical department produced this panel. General Electric provided equipment. In fact, all motors throughout the plant are G.E. Chain conveyors and much other equipment are by Link-Belt.

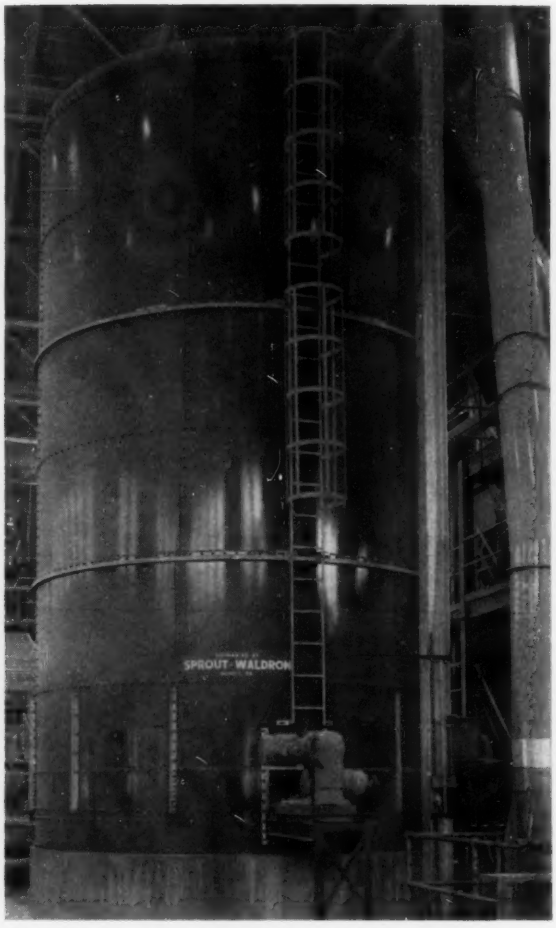
AN IMPRESSIVE VIEW . . . This open area of the plant is 40 ft. high and it is an impressive view from many stations, but particularly from the panel board. The opposite side of the building houses the 5-story high chip bins, and that segment is 60 ft. high.

On the same platform with the control board, but at the far end, is the take-off for large diameter logs. These are spotted easily as they were cut in 4 ft. lengths back at the jackladder. Here a D. J. Murray splitter, with one stroke of a piston, quarters these large logs, and the split sections may be immediately routed back onto the big belt to head for the chippers. Then, on the left, is the take-off to saws which cut the groundwood bolts. Bolts are transported on Link-Belt chain 150 ft. to the old hot pond, and then 800 ft. to the groundwood mill.

Farther along, again on the right side, is the take-off for cull logs. These drop into a hydraulically-operated



HOW OVERSIZE LOGS ARE SPLIT. (Top) Chain takeoff from 5 ft. rubber belt for logs over 2 ft. diameter. They already had been cut into 4 ft. lengths instead of 8 ft. (Middle) Powerful D. J. Murray Mfg. Co. splitter, with one swift stroke of piston, quarters this log. (Below) Splitter withdraws and log slabs fall onto chain for journey back to main belt and chippers.



SOMETHING NEW IN WOOD PLANT. This is the same kind of glass-lined chip silo which farmers started buying like hotcakes when first introduced by A. O. Smith Corp. Now used by Consolidated Water Power & Paper for fuel bark storage. It is non-corrosive and bark doesn't hang up in it. Sprout-Waldron is distributor.

NEW CHAIN TYPE BARK PRESS. (Left) Fibre Making Processes Inc. press prepares bark for burning. It squeezes out 40% moisture. Bark is fed into nip of 24 in. drum on a 24 in. drag chain conveyor. Bark is squeezed at 1,000 psi. (Middle) A closeup of the nip. Pressed bark coming through on chain conveyor. (Right) Control and drive for new press. Bailey Meter speed control unit at left; Falk reducer at right, with a G.E. generator. Speed depends on thickness of mat going through nip, ranging from 1 to 6 rpm.

storage bin resembling a huge steel basket. Cull wood is used for semi-chemical board pulp, and can be dumped back onto the belt, when one of the chippers is in use for the semi-chemical pulping operations. Bauer Centri-Cleaners are used on this pulp, as also on the straight sulfite pulp.

HOW TWO CHIPPERS ARE USED . . . The final take-off on the left is to another parallel belt which leads to a spare or second chipper, which had previously been in use—a 72-in. Carthage chipper. A parallel narrower belt serves this chipper. "Popple" or aspen can be pulled over onto this belt to this chipper while softwoods go on the next chipper, both working simultaneously, without stopping the barkers to change species.

The end of the main belt is the chute to the new 110-in. helical-blade Carthage-Norman chipper.

At this point is a General Electric "electric eye." When the light band is broken by a workman, it will instantly stop the entire big conveyor and close the doors on the barking drums. Being at the 160 ft. end of the long sorting belt, it is a valuable safety device.

In three seconds, the new chipper cuts 8 ft. logs into thousands of ¾ in. chips. Driven by a 1,000 hp General Electric synchronous motor, with 250% pull-out torque, the chipper makes 360 rpm. It has 12 knives, 30 in. long. A new Hanchett knife grinder is located nearby, where knives are sharpened for changing every 5 to 8 hours.

MORE RUBBER BELTS . . . On another rubber belt, chips move to a vertical elevator to the top of the 5-story high chip bins. Leaving the bins, chips are screened over three 5 x 14 ft. screens, two old ones and a new one provided by Link-Belt, and move on to the pulp mill. A Fairbanks-Morse continuously operating scale weighs the chips enroute.

A 390 ft. conveyor system of belting by U. S. Rubber Co. carries the chips through an 8 ft. diameter tube to the pulp mill, where, depending on species, it is diverted to the semi-chemical pulp or sulfite pulp digesters.

This 8 ft. tube is made of 3/16 in. steel with phenolic-epoxy resin plastic coating inside and outside, provided by Wisconsin Protective Coating Co. Part way to the pulp mill, a chain also carries processed bark refuse parallel to the chip belt. At a point between woodroom and pulp mill, high in the air, the rigid tube separates into two sections, one carrying the pulp chips on up to their destiny, and the other housing the bark line to boilers. There is a walkway for workers in the long tube and also it carries small steam and water pipelines.

AN UNUSUAL BARK REFUSE SYSTEM . . . Here, too, are novel installations. As an industrial fuel, bark provides the equivalent of 50 tons of coal a day for Consolidated.

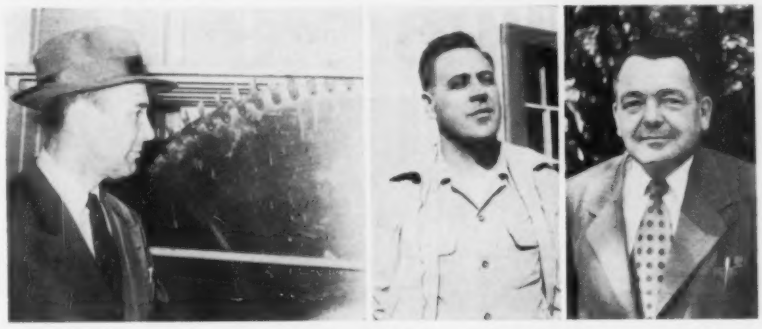
From drums, bark is carried by chain conveyor to a new chain-type Fibre Making Processes bark press, which squeezes the bark to 40% moisture content.

The bark is fed into the nip of a 24 in. drum on a 24 in. drag chain

What's New in an Unusual Wood Plant

What's new and novel in Consolidated's new wood preparation plant? Plenty! To list them in a quick run-down is to virtually name most of its main features:

1. **First hot pond to be warmed by spent sulfite liquor heat exchange.**
2. **First remotely-operated gates to control discharge from barkers.**
3. **Logs and chips carried most of way on rubber—a half mile from barkers to pulp mills.**
4. **160 ft. long, 5 ft. wide sorting belt with these take-offs:**
   a. **Return for cleaner barking.**
   b. **To groundwood bolt saws.**
   c. **To splitter for oversize logs.**
   d. **To cull wood collector (culls for semi-chemical board pulp).**
   e. **To alternate chipper, for simultaneous production of two kinds of chips when desired.**
   f. **To new helical-blade type main-duty chipper.**
5. **One-man control board where operator, with full visibility of plant, controls all operations, except jackladders, saws, and refuse system.**
6. **New type of bark press.**
7. **First use of glass-lined silo for bark (same type of silo which caught on like wildfire with farmers in recent years).**
8. **Steel conveyor tube, plastic-lined inside and out, for both chips and bark.**



HELPED DEVELOP NEW PLANT. LARRY W. MURTFELDT (left), recently promoted to Asst. Mill Mgr., is looking over a spare 72 in. insert-tooth saw for use on new plant's haystack jackladder. He directed overall planning of new addition. MELVIN WELLER (middle) is Wood Preparation Supt. M. V. MOLSBERRY (right), Chief Engineer of Consolidated Water Power & Paper Co., directed engineering activities involving several of his staff.

The Men Who Developed the New Plant

● Larry W. Murtfeldt, recently promoted to assistant mill manager at Consolidated Water Power & Paper Co.'s Wisconsin Rapids Division, coordinated and headed up planning and construction of the new wood preparation plant. An engineering graduate of Washington Univ., St. Louis, with Consolidated for 23 years, he was pulp supt. during this development. John F. Natwick succeeded him as pulp supt.

Melvin Weller, also with Consolidated 23 years, is wood preparation supt., directly in charge.

The company's engineering department, operating departments and Link-Belt Co. collaborated in design and construction of the wood plant.

M. V. (Molly) Molsberry, chief engineer of the company, directed engineering activities.

Arlie Dent, chief construction engineer, and Ed Kryshak, assistant construction engineer, designed the building. George Marcoux, general construction supt., and John Drexler, construction foreman, headed construction.

Vernon Meulenbelt, electrical engineer, headed that work. Roger Steele and Quinn Boyd handled the pond heating system and bark press operation. Richard Sleight handled heating and ventilating. Walter Wefel was in charge of pumps.

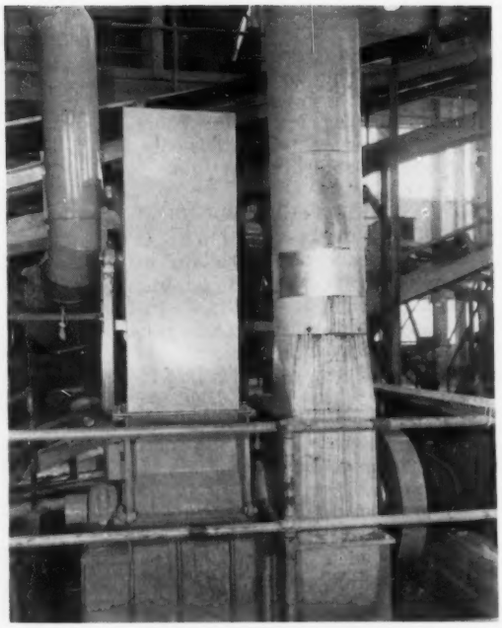
conveyor. Total load on main bearings of the press is 34 tons. Bark is squeezed by 6 Hanna hydraulic cylinders at 1,000 psi. A 30 hp General Electric motor generator set with Falk reducer serves a variable speed drive with a Bailey Meter speed control unit. Speed depends on the thickness of the bark mat going through the nip of the press. The Bailey unit operates with a positioning diaphragm controlled by this thickness. Therefore, there may be wide variations in day-by-day production, but up to 80 tons has been processed. Depending on mat thickness, the press operates at from 1 to 6 rpm.

BARK HOG IS DIFFERENT, TOO . . . Next, the bark goes to a Montgomery Blo-Hog made by Jacksonville (Fla.) Blow Pipe Co., where it is ground up. It does its job without an attendant, as the press does, too. The action is that of a punch and a die, unlike a hammer or knife hog. Breaker lugs on rotors act as punches and opposing anvils as dies. Foreign matter passes through without damage. Bronze shear pins are used in the rotor as extra protection.

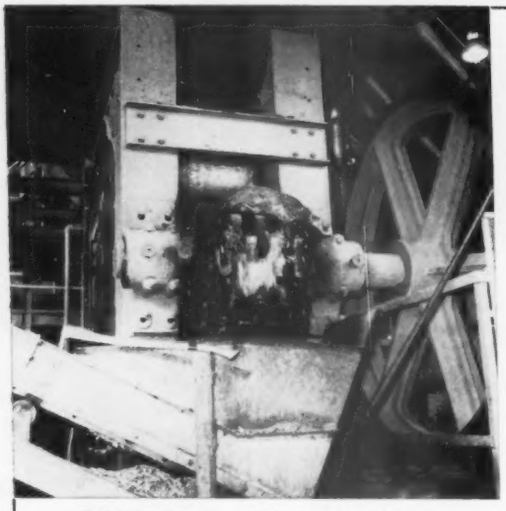
GLASS LINES THE SILO . . . From here, the chewed up bark goes to a new A. O. Smith Corp. glass-lined silo, 32 ft. high and 17 ft. in diameter. This is the type of silo which A. O. Smith developed several years ago, which almost overnight became extremely popular for grain storage on farms.

This is the first time it has been used for bark storage in this industry. The glass lining is non-corrosive and does not hang up the bark. Sprout-Waldron is the distributor. The bark is sent on to boilers for fuel as needed.

The rest of the story is in the pulp mills—semi-chemical, sulfite and ground wood—and on to paper grades ranging from Enamel book to board.



EATS UP ANY KIND OF BARK. This Montgomery Blo-Hog made by Jacksonville (Fla.) Blow Pipe Co., is used to grind up bark intended for boiler fuel at the Consolidated Water Power & Paper Co. mill in Wisconsin Rapids, Wis. Action is that of a punch and a die (breaker lugs on rotors and opposing anvils), unlike a hammer or a knife hog.



FMP Bark Press at Consolidated Water Power & Paper Co.

Made in Canada by—
HORTON STEEL WORKS
Fort Erie, Ontario

FMP BARK PRESS

Bark is pressed between a big cylinder and a steel apron encircling same and backed up by hydraulic pressure rolls. This principle and low speed exposes the bark to pressure for a definite time which results in:

HIGH CAPACITY WITH LOW MOISTURE CONTENT IN PRESSED BARK.

LOW POWER CONSUMPTION AND MAINTENANCE.

Press is driven by a variable speed motor, automatically adjusting the speed to the amount of bark.

The FMP Press can be built in a size to fit any capacity.

FIBRE MAKING PROCESSES, INC.

Russ Building, San Francisco 4, Calif. Tribune Tower, Chicago 11, Ill.

$57 Million Mill for Pine Bluff

International Paper picks Arkansas's third largest city as site for newsprint mill; production slated for late 1957

• On April 10, the Pine Bluff, Ark., *Commercial* sent its venders into the streets screaming "Extra!" for the first time in 20 years. The newspaper had passed up presidential elections, two wars, the H-Bomb and even Kentucky Derbies and the World Series without feeling the need of running extra editions from its presses. But the 10th of April was different. Its headlines blared: "$57 Million Paper Mill Coming; IP Officials Break News At Press Meet."

The entire front page of the paper was devoted to the news that International Paper is to build a $57 million newsprint mill in Arkansas's third largest city. And well it should have been, for the arrival of IP in Pine Bluff will mean employment for 1,450 more persons; it will mean an estimated 200 new employes moving into the city of 46,062; a boost of more than a million dollars in retail sales and an additional million dollars a year in the total personal income of the community.

THIS IS PINE BLUFF, ARK., where International Paper Co. will build newsprint mill. Site is three miles to right (east). Dierks will build its mill at top left.

THE BIG ANNOUNCEMENT—Announcement of IP's new mill by Chairman of the Board John H. Hinman was greeted with surprise throughout the industry. The first contact with Pine Bluff's Chamber of Commerce, however, was reportedly made on Feb. 20, not too many days after IP closed a deal to purchase 395,000 acres of prime timberland in Arkansas, Louisiana and east Texas from Olin Mathieson for $33 million. IP, meanwhile, has also opened six mechanical pulpwood concentration yards in Arkansas to provide local markets for the purchase of pulpwood from local landowners. Close observers had been surmising that something was in the wind.

The new mill was scheduled to be under way by May 15 and will produce 130,000 tons of newsprint and 165,000 tons of bleached kraft board a year—about 95,000 tons more than the 200,000 tons a year now being made at IP's nearby Camden operation.

The chemical pulp mill and kraft machine are expected to be in operation by the third quarter of 1957 with the groundwood mill and newsprint machine going by the end of the year. IP is also completing at present its 115,000 tons-a-year newsprint mill at Mobile.

International's E. C. Guidroz, who has been with the company for 24 years and recently completed work on the rayon pulp mill at Natchez, will be construction engineer, assisted by B. E. Townsend, who recently headed the expansion project at IP's Springhill, La., mill.

WHY IP PICKED THE CITY—Pine Bluff is a natural as an industrial site. It has good water, railroads, good schools, plenty of recreational attractions. Basically, IP picked the site for many reasons. The mill location has a double frontage along the river, where it curls back on itself. Both the St. Louis Southwestern "Cotton Belt" and Missouri Pacific Railroads pass by the front door. The site is protected from floods by Congressional programs which will provide not only flood control but eventual river navigation and hydroelectric development. Of course there is the adequate supply of pulpwood. And conservation engineers estimate an underground water supply of 50 million gallons a day.

ARKANSAS-LOUISIANA EMPIRE GROWS—Construction of this new mill focuses increasing attention on the northern Louisiana, southern Arkansas area—fast becoming one of the most important and influential areas in the entire South. Within a 125-mile radius, there will soon be eight paper mills. Three of these are new (Crossett, IP and Dierks) and two others are either undergoing massive expansion (Olin Mathieson's $40 million face lifting at the old Brown paper mill in West Monroe) or were recently overhauled (IP's Springhill mill.) Improvements and construction in this area alone will total more than $120 million in the next two years.

For IP, the new mill comes into a family which already includes 21 pulp and paper mills, 30 converting plants and 21 million acres of timber, either owned or leased. Most of the 4,500,000 tons of paper made annually by IP is produced in the South. The Commerce Department recently estimated U.S. newspaper demand at 6,850,000 tons of newsprint a year. The expected supply of 6,810,000 tons leaves an "apparent deficit of 40,000 tons." When added to the 115,000 tons to be made at Mobile, IP will be producing about 245,000 tons of the 645,000 produced in the South each year. This should fill the present demand.

COATING COMMITTEE COUNCIL. (L to r) JACK E. WILBUR, St. Regis Paper Co.; JOHN D. DAVIS, Mead Corp.; ALFRED D. BONANNO, Kelco Co.; JOSEPH T. LOOMER, Robert Gair Co.; and HARRIS O. WARE, Chairman, Hercules Powder Co.

Spectacular Increases in Coating

Reflected in record attendance at Philadelphia. Billions being spent on packaging spur synthetic adhesives trend.

● Spectacular inroads are being made by machine coated paper and board into uncoated fields. All indications are that this upward climb will continue.

From less than 1,000 tons in 1935 and 300,000 tons in 1942, machine coated papers alone skyrocketed to 1,300,000 tons in 1955. Early 1956 production figures show a 20% increase over 1955. About 70% is in for the highly competitive magazine publishing field.

Machine coated paperboard figures are more elusive. Makers of these grades do not specify whether uncoated or coated and the U. S. Dept. of Commerce does not list such production. However, PULP & PAPER has been able to make estimates which show this market is even more dynamic than coated paper.

In 1954 Glen Sutton, superintendent of the North Side mill of Sutherland Paper Co., predicted to PULP & PAPER that from an estimated 10% of total paperboard production, coated grades would soar to 75% of total board production in 5 years. This would put machine coated board at somewhere around 1,368,600 tons in 1954; about 3,000,000 tons in 1955. Now, based on estimates of the Stanford Research Institute for Weyerhaeuser Timber Co., it would climb to 15,800,000 tons of machine coated board in 1960!

(Correlation of some of these figures is seen in a recent U. of Maine statement that some 4 million tons of paper and board are coated.)

ATTENDANCE RECORD . . . This growth pattern is a reason why great interest was shown in TAPPI's Seventh Coating Conference May 7-10 in Philadelphia. Attendance of 653 smashed all previous records and surprised those who had planned on a top figure of 450. This group was recently raised to status of a TAPPI division. Attendance compares with 1955's 435 and that of previous two years' popular Engineering meetings which averaged around 500.

Focal point of interest this year was synthetic adhesives and one technical director of a well-known coating mill said the timing was perfect because of the rapid growth of synthetic adhesives.

Reasons behind the trend toward synthetic adhesives, according to one mill technical director, are:

- High mechanical stability.
- High binding qualities.
- Color stability.

A factor, of course, is cost, but this can be offset by extending with natural adhesives. Synthetic adhesives is a booming business; just how big manufacturers will not reveal.

A hot subject among manufacturers, especially of magazine coated stock, was the new Rice Barton trailing blade being used at Blandin Paper Co. to produce coated paper for Look Magazine. This is a new field for Blandin and reports say that they are coating at speeds up to 1,500 fpm and could go faster but are limited by speed of paper machine.

These coating conferences are about the hardest working of all industry conventions and much mention was made of unusually high attendance at meetings. Visits were made to the Manayunk, Pa. mill of Container Corp. of America (which has Champion coaters on two of its cylinder machines); the new DuPont Polychemicals Dept. $3 million sales service laboratory, and Hercules Research Center, both at Wilmington, Del.

BOX INDUSTRY HEADS FOR BILLION . . . Luncheon speaker Norman F. Greenway, senior vice president, Robert Gair Co., Inc., and president of Folding Box Association, said: "The

NORMAN F. GREENWAY, Senior Vice President, Robert Gair Co. Inc., and President, Folding Box Board Assn. "No one knows how big the packaging world is . . . some estimates say business spends upwards of $10 billion–$12 billion–$15 billion a year on packaging. . . . the folding box industry is racing toward a $1 billion a year industry and (will) pass this mark without even blinking."

folding box industry is racing toward a $1 billion a year industry, and will pass this mark without a blink."

Mr. Greenway emphasized the increasing interdependence of sales and technical segments of the industry—"two ends of the same piece of string."

"People generally are aware of newspapers and magazines," he said. "So is industry when it comes to looking for a means of bringing its product before the collective eyes of the consumer. But industry has been singularly blind to potentialities of a properly designed, printed and executed package as the star performer in this field of silent salesmanship.

"Those of us who have lived with packaging for a long time see the dramatic role good packaging can play in shaping the corporate profit or loss statement. We deplore the fact that so many managements have not been quicker to utilize the volume-building and profit-making potentials of good packaging that are already at work for many successful companies.

"The American people," said Mr. Greenway, "have some 300 billion dollars in their pocketbooks and they are spending $200 billion a year for goods that are or should be packaged.

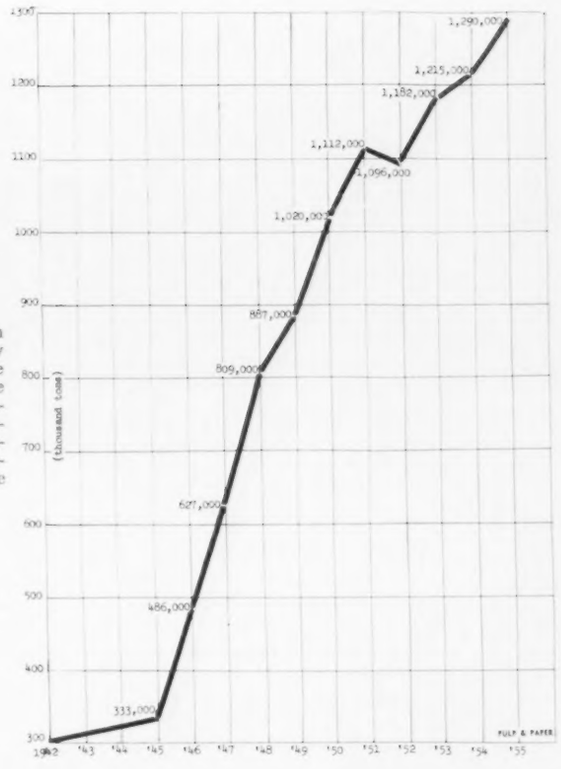
"No one really knows how big the packaging world is. Some estimates say business spends upwards of $10 billion to $15 billion a year on packaging. This may be low."

He mentioned a survey by his association which revealed that of 307 top food manufacturing, wholesaling and retailing companies doing more than $30 billion yearly, 81% had introduced a new package in 1955.

LIFE DROPS A "TIME" BOMB! . . Whatever feeling of complacency delegates might have had as they gathered for the first morning session, were wiped out by Andrew Heiskell, publisher of Life magazine of Time, Inc.

"Life could have started one year earlier but for you gentlemen," he said. "There just was not the right kind of coated paper in 1935. You have no idea of the importance we set on what coated paper did for us. Life buys some 200,000 tons of fine coated paper, but not fine enough, for which they pay some $40 million annually. This is about 15% of total coated paper market."

ANDREW HEISKELL, Publisher of Life Magazine: "You have no idea of the importance we set on what coated paper did for us."



SPECTACULAR GROWTH OF MACHINE COATED PAPERS is shown in this chart prepared by PULP & PAPER. The President of one coated paper mill predicts a greater increase: 90% of printing paper will be machine coated some day.

The lanky publisher of the 5,700,000 circulation picture magazine asked for greater quality. "We need quality and need it badly," he pleaded. Life wouldn't dare go below 35 lb. now, he said, but would like lighter weight because of transportation costs. He also asked for greater strength because now, "although we're running between 1,200 fpm and 1,400 fpm, we'd like to go to 2,500 fpm in 5 years."

In 1937, Life had 19% of its ads in 4 colors; and in 1955, 55%. He estimated in 1960, it probably would be 70%. He mentioned that during World War II when Life printed a special Armed Services issue, soldiers complained of lack of advertisements.

VARIATIONS AND PRINCIPLES . . . Lead-off speaker Robert C. Chase, of U. of Maine, discussed variables in flow properties of paper coating colors. These variables included type of coater, method of preparation on effect of base stock, adhesives, roll hardness and diameter, clay species, adhesive particle size distribution, ion displacement, dispersing agent and pH.

"Two factors governing principles of adhesion are 'spreading' and 'holding,'" Dr. Mark explained. "'Spreading' is a kinetic phenomenom determined by rate of diffusion of molecules or segments of the adhesive and permits them to establish a wide and close surface contact. 'Holding' is a static effect and depends on the sum total of all bonds which have been established all over the contact and are between the adhesive and substrata."

George L. Booth, Black-Clawson Co., Dilts Machine Div., presented a survey of reasons for machine coating, advantages and possible future trends. Three primary reasons for machine coating, he explained, are speed, cost of conversion and more utility in simultaneous two-side coating.

Lou E. Georgevits, The Borden Co., said raw casein variations arise from its source and method of manufacture. Avenues of approach toward the improvement of casein for paper coating include hydrolysis of protein to reduce viscosity, chemical treatment to stabilize against spoilage and low cost compounding to improve the coating surface, he said.

Coating adhesive demand and what pigment function governs it was subject of a study by Dr. Cobb. She studied 15 pigments with considerable variation in chemical composition, physical characteristics and adhesive demand.

"HIGH-POWERED" PANEL: (L to r) LLOYD H. SILVERNAIL, Dow Chemical Co.; JAMES P. TALLEY, Goodyear Tire & Rubber Co.; (standing) NORMAN I. BEARSE, Champion-International Co.; DR. F. H. FROST, S. D. Warren Co.; LEONARD SHAPIRO, The Borden Co.; FRED L. SCHUCKER, Rohm & Haas Co.; HAROLD M. ANNIS, Oxford Paper Co.; JACK E. WILBUR, St. Regis Paper Co.; and HARRY C. FISHER, Gardner Board & Carton Co. Theme was "What the Paper Coating Industry Desires in Synthetic Adhesives."

NEW PRODUCTS . . . In using new starch products in coating adhesives, Daniel E. Lucas, Corn Products Refining Co., said problems involved are (1) development of adequate wet-rub resistance at neutral or alkaline pH levels, (2) viscosity stability at high solids and (3) better adhesive performance at lower adhesive concentration. Latices and resin emulsions in starch adhesive component of the coating color has minimized wet-rub resistance, he said.

Economic advantages of high speed high solids coating have prompted development of new products. Higher converted dextrines found unacceptable, from an adhesive standpoint, in lower solids work may now be of interest in high solids colors where less water is present.

William C. Black of Penick & Ford, Ltd., described use of starch derivatives and properties of low-substituted corn starch ethers.

J. R. Belche, Allied Chemical & Dye Corp., said it appears, that a new, inexpensive product is available for forming highly water resistant starch films. Commercially available UF Concentrate is a liquid containing approximately 59 wt % formaldehyde, 26 wt % urea and 15 % water.

"All of the formaldehyde and urea is available for further reaction," he explained. "Highly water resistant films can be formed by simply adding UF Concentrate to oxidized, dextrinized or enzyme modified starch dispersions. Flms formed from these dispersions have been more water resistant than films from dispersion to which dimethylolurea had been added."

A "HIGH-POWERED" PANEL . . . Moderated by Dr. Frederick H. Frost, S. D. Warren Co., the panel discussed "what the paper coating industry desires in synthetic adhesives." Representing the industry were Harold M. Annis, technical director, Oxford Paper Co.; Norman I. Bearse, vice president of production, Champion-International Co.; Jack E. Wilbur, head of coating research, St. Regis Paper Co.; and Harry C. Fisher, consultant to technical dept., Gardner Board & Carton Co. For suppliers were Lloyd H. Silvernail, Dow Chemical Co.; Leonard Shapiro, The Borden Co.; J. P. Talley, Goodyear Tire & Rubber Co., and F. L. Schucker, Rohm & Haas Co.

WHAT DO MILLS WANT? . . Mr. Wilbur said adhesives must present some obvious advantages to offset costs, as improved flexibility, folding, finish and gloss ink which holds up as well as controlled ink receptivity.

"It is not just a slight improvement we are looking for," he explained. "We would also like to get by with lower total binding content on our coater. Probably the most common way to justify synthetic adhesives is to extend them with natural adhesives. Another is the markedly improved operation and performance of our converting equipment. Total solids content can be markedly increased."

Mr. Bearse said that because of the pre-education job done by suppliers, that the industry now approaches latices differently.

"Production problems and transportation stability are important," he said. "In storage, shelf life must be good. We expect the delicate emulsion to have mechanical and chemical stability. The foam problem is not completely solved. Sticking on supercalenders also has an effect on character of finished paper. Another problem to be licked is allergy and its effects on workers."

Mr. Fischer said what the board industry needs are synthetic latices to be applied in heavy coating weights. There are two contrasting schools of thought, he explained; the thin (1.5 lbs. dry weight per M ft. of coated surface) school and the thick (5 lbs. per M ft. of surface.)

Mr. Annis said the industry owes much to the suppliers who are sound technical men. Key problems in magazines, he said, are low cost, good printability and good press performance.

THE FUTURE . . . A significant paper and one that may presage new approach in coating development was that of James P. Talley, of Goodyear Tire & Rubber Co., who described latex emulsion paint technology as applied to paper coatings. "The paint industry has made tremendous strides in studies of latex emulsions and basically, what you fellows are doing is the same thing," he said.

Coating Meetings Lead All; Next Year in Milwaukee

The Eighth Coating Conference will be held at Hotetl Pfister, Milwaukee, May 20 to 22, 1957.

Theme will be manufacture and processing of coated paper and paperboard.

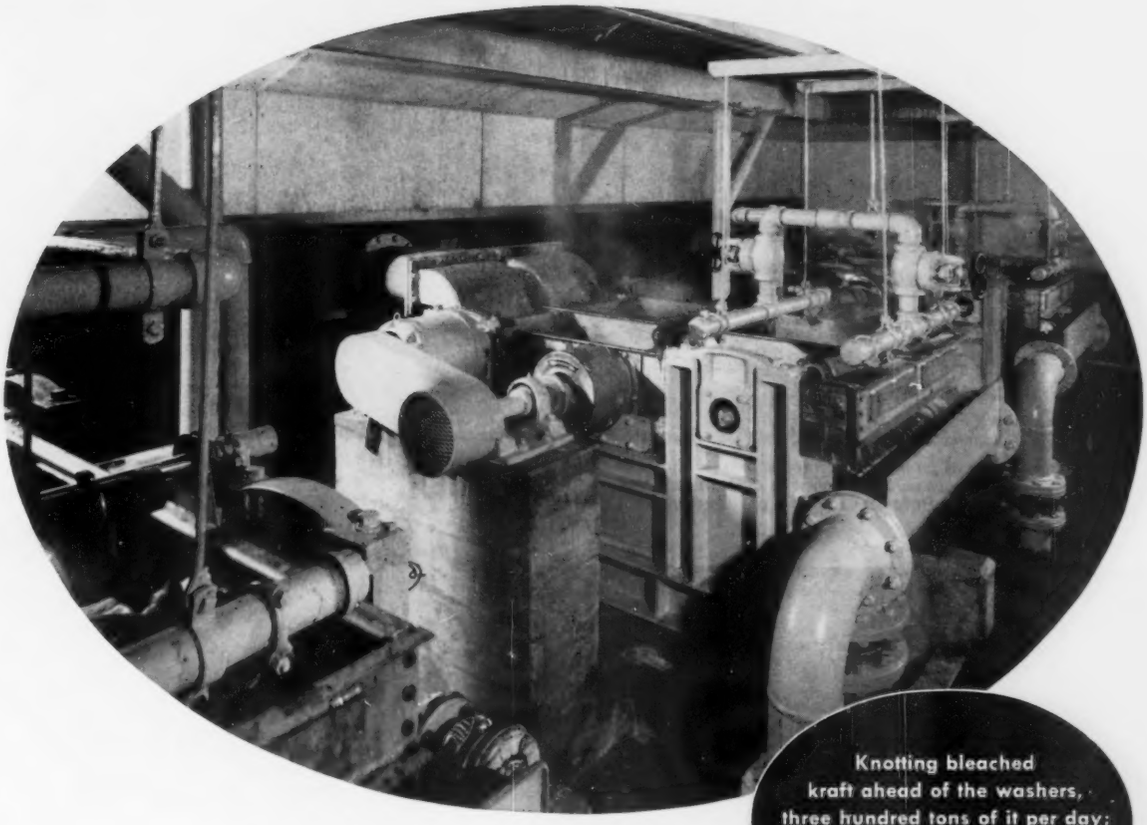
Chairman will be Jack E. Wilber, head of coating research, St. Regis Paper Co., Deferiet, N.Y.

The chairman for 1958 will be Chet Landis, American Cyanamid Co., and an eastern city will be selected.

The Coating Division is the youngest of TAPPI divisions. Of all the various divisions holding their own meetings, this is now the biggest—reckoned by attendance. Here is its attendance box score:

1949—300 in Grand Rapids, Mich.
1950—no meeting.
1951—284 in Boston.
1952—333 in Chicago.
1953—350 in Cincinnati.
1954—455 in Poland Springs, Me.
1955—454 in Cleveland.
1956—653 in Philadelphia.

BIRD JONSSON SCREENS



Knotting bleached kraft ahead of the washers, three hundred tons of it per day; an efficient, economical job for these three Bird Jonsson Screens

Wherever there's a job of knotting, bull screening or perforate plate screening to be done, Bird Jonsson Screens rate first consideration on the basis of their performance in hundreds of installations.

Capacity per Screen runs 80 to 100 tons per day on sulphite, up to 200 tons on groundwood and kraft. Consistencies may be as high as 1½% on sulphite, 2½% on groundwood and kraft.

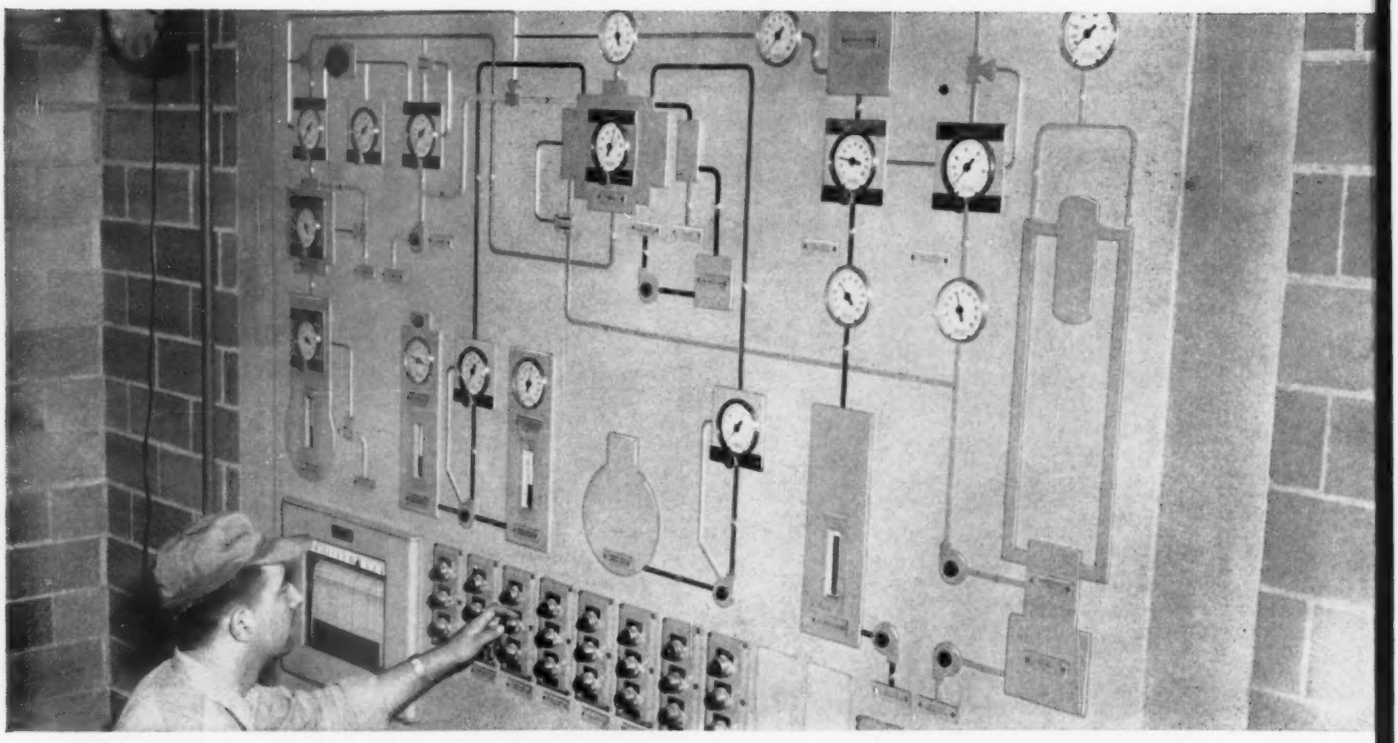
Write for recommendations, layouts and estimates.

BIRD MACHINE COMPANY

SOUTH WALPOLE, MASS.

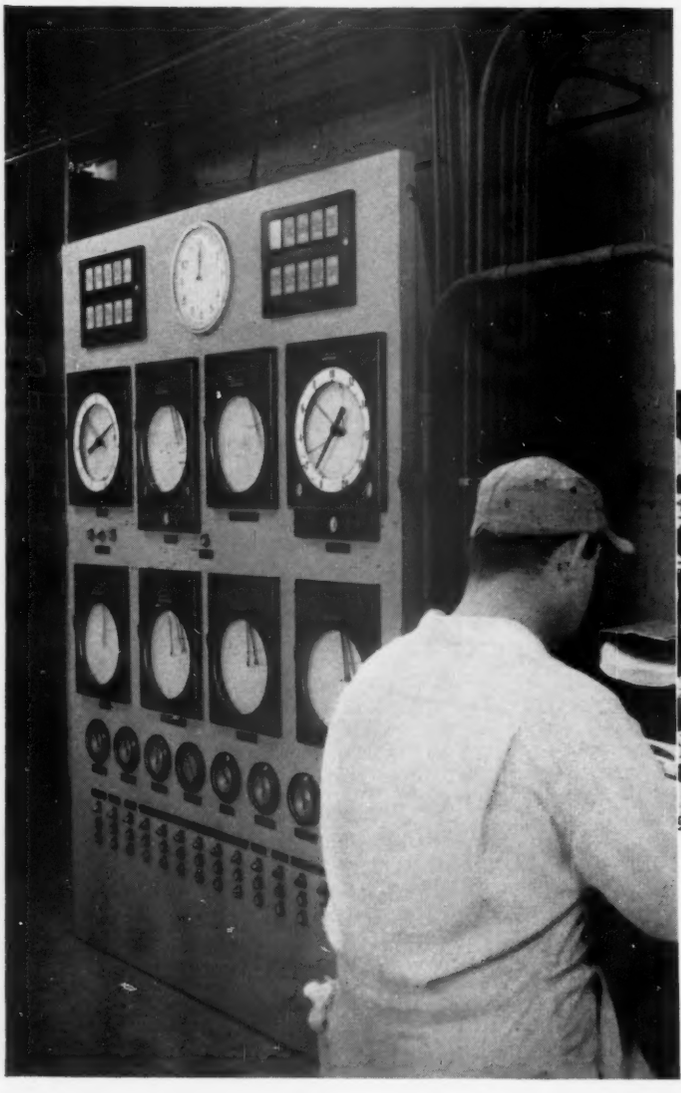
REGIONAL OFFICES: EVANSTON, ILLINOIS
PORTLAND, OREGON • ATLANTA, GEORGIA

Canadian Manufacturers of Bird Machinery
CANADIAN INGERSOLL-RAND COMPANY, Limited, Montreal

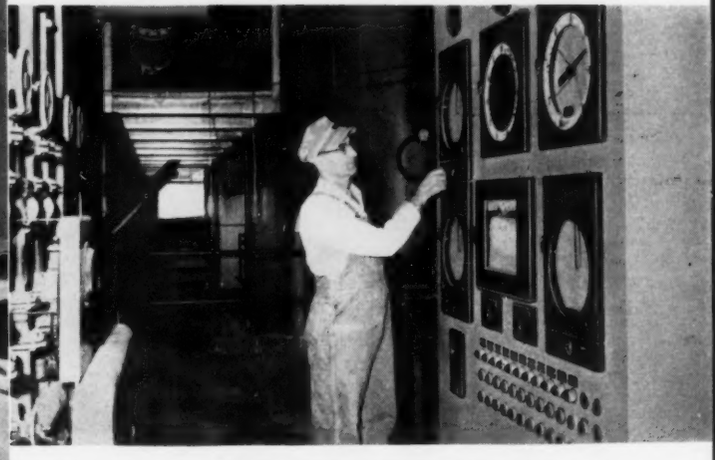


Graphic control panel with compact process diagram is set in wall to save valuable space in ClO_2 installation at West Virginia Pulp & Paper Co., Covington, Va.

Savings begin

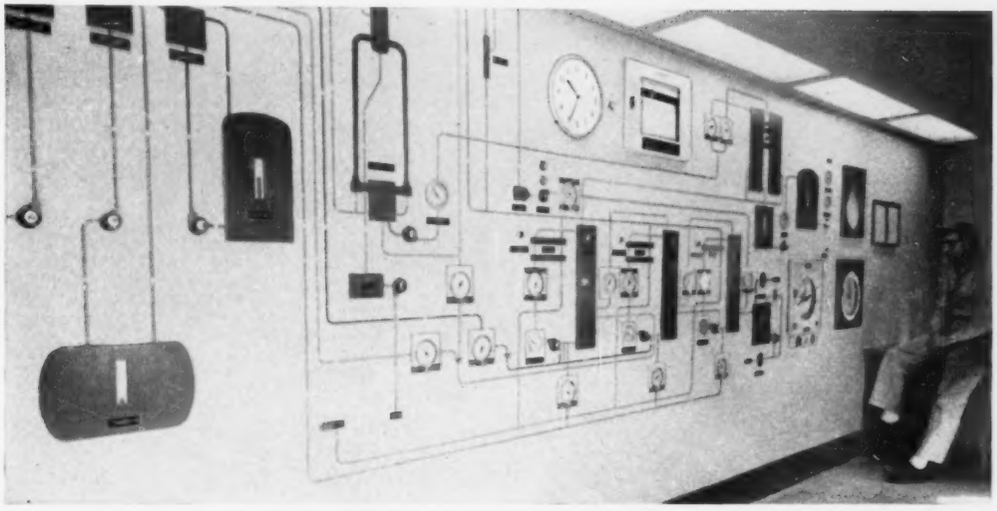


Conventional panel centralizes control of remotely located ClO_2 generating plant at Camp Manufacturing Co., Franklin, Va.



Conventional control cubicle designed for installation at process equipment location in ClO_2 installation at International Paper Co., Spring Hill, La.

Large process diagram on graphic control panel provides visibility of overall process conditions in ClO_2 installation at P.H. Glatfelter Co., Spring Grove, Pa.



in the planning stage of ClO_2 INSTRUMENTATION

Honeywell control systems are custom-fitted to your process to give maximum efficiency at lowest cost

No need to waste your engineering time in planning instrumentation for the two major ClO_2 processes. Honeywell supplies standard drawings and quotations for basic graphic and conventional control systems for each process. Of course, quotations can be modified to suit your needs.

And you can get these basic control systems custom-fitted to your space requirements . . . adapt instrumentation to your construction plans, rather than build *around* your controls.

Regardless of what ClO_2 process you choose, Honeywell can point to an actual control installation—an installation that's proved itself in terms of efficiency, product quality, operating costs.

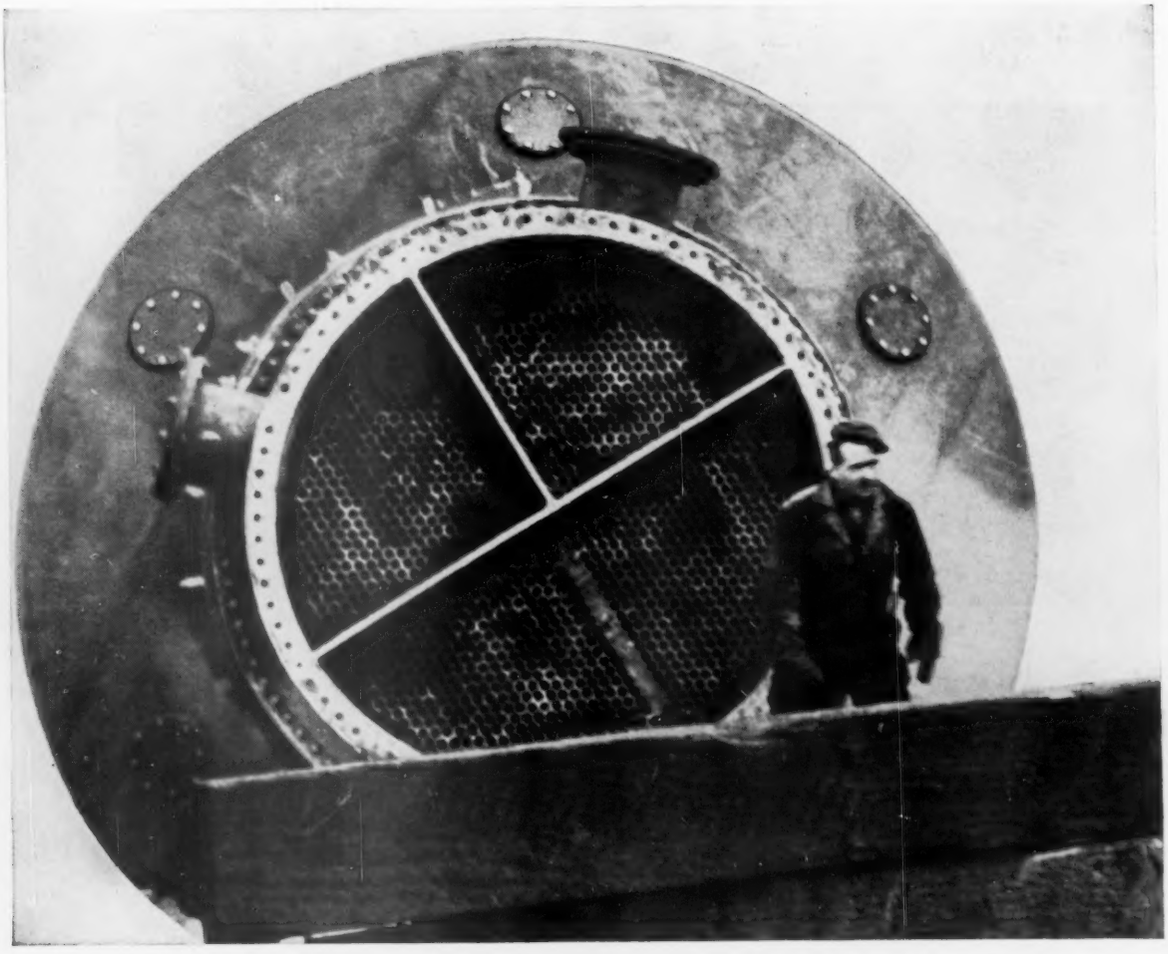
Honeywell supplies the *complete* ClO_2 control system. Instruments and auxiliary equipment are premounted, prepiped and prewired with readily accessible field connections. Service is available before, during, and after installation.

Whether you plan to buy your instrumentation direct or through a consultant, get the complete control story from your local Honeywell sales engineer. He's as near as your phone. MINNEAPOLIS-HONEYWELL REGULATOR CO., *Industrial Division*, Wayne and Windrim Aves., Phila. 44, Pa.—in Canada, Toronto 17, Ontario.

MINNEAPOLIS **Honeywell**

BROWN INSTRUMENTS

First in Controls



5½ miles of cost-saving corrosion control with *Carpenter* Stainless Tubing

Nearly 30,000 feet of Carpenter Stainless Tubing are installed in this 35-ton surface condenser specially designed for condensing blow-down steam from digesters in a paper mill.

Cost-saving, trouble-free corrosion control is only one of the many advantages you get with Carpenter Stainless Tubing. The industry's top quality control processes assure an extra measure of uniformity, quality and perfection in every shipment. Faster, easier fabrication of Carpenter Stainless Tubing makes any tubing or re-tubing job more economical.

Ask your Carpenter Distributor for full information on the new non-destructive quality control test that assures better-than-ever quality in Carpenter Stainless Tubing.

MEMBER

The Carpenter Steel Company
Alloy Tube Division, Union, N. J.

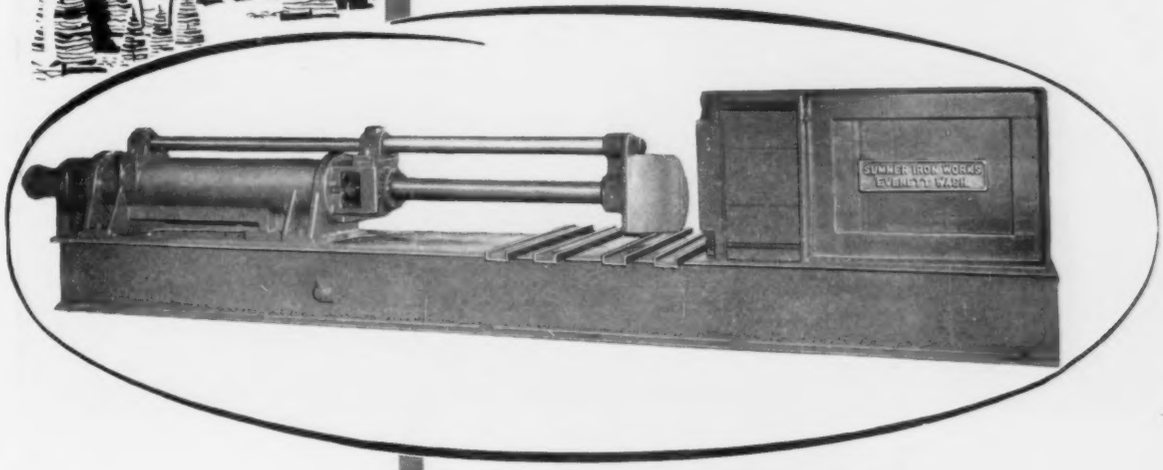
Export Dept.: The Carpenter Steel Co., Port Washington, N. Y.—"CARSTEELCO"

Carpenter

more than corrosion resistance

Stainless Tubing & Pipe

THE AXE *with the* BUNYAN PUNCH!



SUMNER'S AXE SPLITTER

For rapid breakdown to sizes suitable for chipping or grinding, the SUMNER Air or Steam Axe-Splitter operates with a force and competence Paul Bunyan might well have envied.

The Splitter customarily built to break down 48" long wood can be constructed to accommodate greater and lesser log lengths. The working end of the splitter is a heavy single-bit cast steel axe.

The anvil is of heavy cast steel, cushioned against a wood bulkhead set against a sand-filled box. The entire assembly of axe, guide rods, anvil and bulkhead is mounted on a heavy structural steel frame, providing a complete self-contained unit.

As with all SUMNER equipment, this Splitter incorporates simplicity and sturdiness of proven reliability.

. . . Bring more efficient log breakdown to your mill by writing for details today.

Designers and Builders of Quality Machinery Since 1892

Log Handling Machinery • Wood Room Machinery • Sawmill Machinery • Pulp and Paper Mill Machinery • Industrial Machinery • Steel, Iron and Bronze Castings

Designers and Builders of Quality Machinery for the Forest Products Industries

ESTABLISHED 1892

SUMNER IRON WORKS

EVERETT, WASHINGTON

In Canada: Canadian Sumner Iron Works, Ltd., Vancouver, Canada

Adirondack logger chooses Allis-Chalmers crawler tractor power again

J & C LUMBER CO., WEST LEYDEN, N. Y., ADDS HD-11

Up in the central Adirondacks the slopes are steep, the ground rocky and frequently wet. That's why J & C Lumber Co. looks for an *extra* measure of output and dependability in a crawler tractor . . . why they chose Allis-Chalmers again . . . this time an HD-11.

The HD-11 works eight hours a day, six days a week — skidding hardwood and pulp logs, and building roads. What does J & C Lumber think of its performance? Partner Joseph Kwasniewski says:

"We like the HD-11's easy starting." Twenty-four-volt electrical system provides direct starting on diesel fuel, greater operator convenience.

"The HD-11 has real power." Allis-Chalmers long-life diesel engine with follow-through combustion gives extra lugability, more complete burning of fuel, longer lube oil life.

"It's easy to lubricate." Because Positive Seals keep grease in, dirt and water out, truck wheels, idlers and support rollers require lubrication only once every 1,000 hours. Tapered roller bearings on these parts reduce friction . . . keep tracks rotating freely.

"We like the HD-11's high clearance." Double-reduction final drives give extra clearance on rocky terrain. And straddle mounting puts bearings on both sides of drive gears to maintain gear alignment.

Check the other advanced design HD-11 features at your Allis-Chalmers dealer: unit construction . . . all-steel box-A main frame . . . one-piece steering clutch and final drive housing . . . wrap-around radiator guard. And check your dealer's complete service program . . . factory-approved service methods, factory-approved facilities and stocks of Allis-Chalmers True Original Parts to keep your equipment operating properly.

ALLIS-CHALMERS, CONSTRUCTION MACHINERY DIVISION
MILWAUKEE 1, WISCONSIN

Look to the advanced design HD-11

85 belt hp
20,500 lb

ALLIS-CHALMERS

Shovel-Crane owners!

sharing your profits with old-fashioned clutches?

Remember the day the weather was fine, footing good and you were really moving pulpwood . . .

THAT was the day it looked as though you were going to set a new yard record. But the clutches were getting hotter all the time. By mid-morning the shovel-crane went down for clutch adjustment—the heat had done it. After the noon break, the same thing happened. How many cords of wood do you figure you were penalized for having a rig with old-fashioned clutches?

Avoid costly downtime

With a Link-Belt Speeder you get modern power hydraulic-actuated clutches that automatically compensate for heat and normal lining wear. In fact, most Link-Belt Speeder owners will tell you these clutches are so good, adjustment is needed only once or twice a month.

It's just one of many ways you're big money ahead with a Link-Belt Speeder.

Get the complete story from your distributor. He'll show that whatever rigs you need—crawler or rubber-tired . . . ½ to 3-yd. 8 to 60-ton capacity—you'll earn bigger return on your equipment dollars with a Link-Belt Speeder. Or write for literature—LINK-BELT SPEEDER CORPORATION, CEDAR RAPIDS, IOWA. 13,081

LINK-BELT SPEEDER

Builders of a complete line of crawler and rubber-tired shovel-cranes.

PULPWOOD HANDLING AT ROME KRAFT

DiesELectric Helps Handle 1300 Cords of Pulpwood Daily!

Peeling logs *before* storage is a new concept in pulpwood handling at Rome Kraft Co. The North Georgia firm receives approximately 1300 cords of pulpwood daily—by rail and truck—from producers in four states! This staggering volume of pulpwood is unloaded onto three conveyors that feed the drum barkers. From there, the logs go into storage. In Rome Kraft's big woodyard, a 40-ton American DiesELectric* Locomotive Crane unloads railcars, trucks and truck-trailers—dumping the pulpwood directly onto the conveyors!

For big yard operations, like Rome Kraft's, American's DiesELectric system is tops—electric powered trucks move the crane around the yard quickly—smoothly, can even perform switching jobs! And, with an American, you can raise or lower the boom—swing—travel *and* hoist all at the same time! A real time saver that's vitally important when you're working all around the yard! To learn why American Locomotive Cranes—offered in 25 to 80-ton capacities—operate at lower cost while doing more work, write:

AMERICAN HOIST
and Derrick Company
St. Paul 1, Minnesota

* Registered Trademark. Diesel-Electric Locomotive Crane U.S. Patent No. 2083460, Canadian Patent No. 368226 and Touch Control U.S. Patent No. 2370859 granted to American Hoist and Derrick Co.

CHAIN BELT answers your wood handling problems . . .

NEW REX® DUROBAR WS* CONVEYOR CHAINS GIVE LONGER SERVICE, BETTER OPERATION

Right where the most sliding wear takes place, these new Rex Durobar Conveyor Chains have an extra heavy shoe on the block link. On woodyard conveyor service, or for any conveyor application where wear due to sliding is a problem, these chains are the economical answer.

This special wearing shoe not only adds extra life to the chain, but also improves its operation in the trough. There is less side play and wear to chain sides — a feature that boosts performance and cuts down repair and maintenance costs. Look over the features of this chain and you will see why lumber, chemical, pulp and paper mill companies prefer Rex Durobar WS Chains over all others for conveyor service.

- Extra heavy wearing shoes with reinforced rib materially lengthen chain life, improve performance and reduce costs.
- 3-diameter pin. A famous Rex feature that makes assembly and disassembly easy and quick.
- Close tolerances and quality construction. Close-fitting pins and links insure longest service. Heavy-duty, rugged construction — eccentric barrel puts more metal in contact with sprocket to lengthen service life of both chain and sprocket.
- Available in tough Rex Malleable Iron or wear-defying Rex Z-Metal. In Z-Metal, this chain has additional strength plus corrosion and abrasion resistance qualities.

Rex A-132-WS Durobar Conveyor Chain—Average Ultimate Strength—Malleable Iron—50,000 Lb. Width, Inches — 6-11/16.

***Special Wearing Shoes**

CHAIN BELT COMPANY

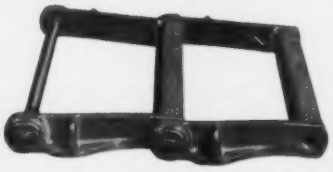
LEADERSHIP . . . through creative engineering

CHAIN BELT has the answer to lower costs for every WOOD HANDLING job!

• Here, from the *complete* line of CHAIN Belt products you will find the answer to your power transmission, conveying or elevating problems. Not only will you find the exact chain, idler or bearing to fit your work — you will find the highest quality and dependability . . . quality built on over half a century's experience supplying the forest products industry.

Carefully selected metals . . . skillful hardening or heat-treatment . . . experienced workmanship and design . . . combine to produce the finest products — products that give you longer service, reduce down-time and cut maintenance costs. Whatever your wood handling problem, CHAIN Belt will give you the cost-cutting answers.

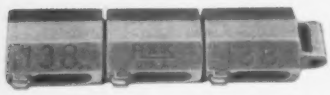
Rex H-Type Mill Chain — Most popular of all sawmill size chains for conveyor use. A tough, versatile chain with special wearing shoes for sliding.



Rex H-Type Mill Conveyor Chains—Used for conveying slabs, chips, sawdust and refuse. Heavy, one-piece links with thick barrel provide long wear and good scraping action.

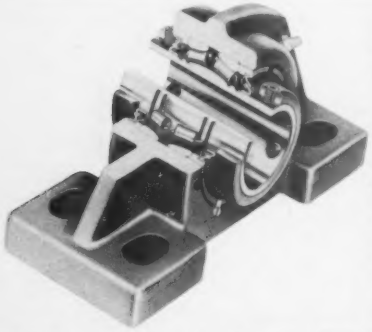
Rex Durobar and Combination Chains — A proven standard for wood handling service. Eccentric barrel of Durobar chain reduces wear on both chain and sprockets.

Rex Roller Drive Chain—The ultimate in high-speed drive chain. Highly flexible to withstand heavy shock loads. Precision-made for longest life. Available in single or multiple strands for a variety of drive uses.

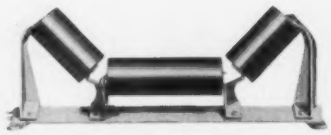


Rex Roof-Top Transfer Chains — Primarily a green chain, but frequently found in sawmill transfer service. Choice of peaked or flat roof-top design. Flat roof generally used for handling finished lumber as it will not score.

Rex Chabelco Chains — For severe conveyor service, Rex Chabelco Chains are first choice. Available in both straight and offset side bar construction. Also special Chabelco Chains designed for log deck, log haul-up, trimmer, etc. service.



Shafer Self-Aligning Roller Bearings — These bearings combine the best advantages of the roller and the ball by using concave rollers operating between convex races. Their stamina and dependability have been proved under extreme load conditions found in the lumber and pulp industries. Their reserve capacity is your assurance of longest life and continuous peak performance.



Rex Style No. 46 Troughing Idler — Specially designed for handling wood chips. Concentrating rolls of the idler are sloped at 45° to provide exceptional carrying capacity. This feature permits loading of chips close to the belt edge without spillage and gives the belt additional carrying capacity when compared to the conventional 20° sloped idlers.

CHAIN Belt Company
Dept. FP-3
Milwaukee 1, Wisconsin

☐ Please send catalog on Rex products for the Forest Products Industry.

☐ I would like to discuss my wood handling problems with a CHAIN Belt District Sales Engineer.

Name.....

Company.....

Address.....

City..... State.....

CHAIN BELT COMPANY

MILWAUKEE 1, WISCONSIN

LOTS OF WOOD HERE. BEVERLY PALMER (left), Mgr. of Rockton, S.C., Concentration Yard, first of 20 such yards serving Charleston, S.C., Mill, points happily to high, clean row, as CAM NIEDERHOF (right), Wood Procurement Mgr. for entire West Virginia system, looks on approvingly.

● *PULP & PAPER ON-THE-SPOT REPORT:*

No Lost Cords at West Virginia

Exclusive story of how Charleston mill gets its wood. "Secret of success" for first class pulpwood operation

● Perched casually on the corner of a hotel room desk, West Virginia's Cam Niederhof dialed a number, waited while it rang, then suddenly unleashed half a dozen questions into the mouthpiece:

"How's the weather look, Nick? Has the rain petered out? How much water in the woods? Are they moving pulpwood okay? What's the inventory at Camden? How about Rockton?"

So it went. Questions rattled through the room like machinegun fire. The voice on the other end of the line belonged to one of West Virginia Pulp and Paper Co.'s two procurement section superintendents, each in charge of a division of concentration yards which sprawl out over South Carolina and Georgia like the freckles on a hound dog's belly. As wood procurement manager, Cam Niederhof is "straw boss" of this system.

Tall, vastly energetic, friendly, but quick and direct as a bullet, Mr. Niederhof has helped to build this system into a crack operation, as efficient as a conductor's watch. He has his finger on every pressure point of the department. When the pulse wavers somewhere along the line, he knows it. When there's trouble along the way, it's a 100-to-one shot that he'll have the answer.

As one woodyard manager put it: "When you get a headache, you don't take an aspirin, you just call Cam."

According to Cam, however, no one man is indispensable to this system.

THE PROBLEM: How to Control Wood Supply

The symbol of the South's big bull paper market of today might well be the Horn of Plenty. But in the shadow of this cornucopia one problem looms tall—how to control the wood supply.

The market on pulpwood threatens to become a battle for survival, unless the problem is overcome, especially in areas where mill "territories" overlap.

How can mills better control their wood lifeline? Here is how one of the nation's biggest paper companies attacks the problem.

PULP & PAPER'S PANORAMIC CAMERA CAPTURES THIS FULL VIEW of Rockton, S.C., concentration yard. The first of West Virginia's concentration yards, it has 1,600-cord capacity.

It merely hews the line—a combination of communication, planning and policy.

A PROCUREMENT "BIBLE" . . . One reason it is easy for any man in West Virginia's wood procurement department to come up with the right answers is a thick, 200-plus page manual, "Pulpwood Procurement Policies and Practices Manual, Charleston Mill." Between its covers, questions that haven't even been asked yet are answered. It covers everything—where timber is, forest and wood resources, pulpwood inventory and how it is determined, pricing, scaling, quality control, contract logging, competition, how to make records and reports, system for purchasing pulpwood.

Some of the information in the manual is confidential. It even contains individual reports on producers and dealers, what kind of equipment they use and their past performance. When possible, maps and graphs have been used to clearly illustrate points. A look at the West Virginia procurement "bible" shows exactly how the system was devised and how it works now.

TRIAL MINUS ERROR EQUALS RESULTS . . . In 1951, West Virginia decided to try out the concentration yard system. Areas were established for yards and the concentration point was placed somewhere centrally located and on a rail spur. Wood formerly had been handled at more than 300 points and the work load was terrific. In addition, the system then in existence was far from satisfactory since there was no way accurately to control the flow of pulpwood into the Charleston mill. The first yard was set up at Rockton, S. C.

The system of collecting pulpwood at a central point and controlling its shipment to the mill as it was needed was found to be the answer to many problems. Trial and error through the years has brought constant improvements to the procurement practice.

One of the most important boosts to the system was the complete mechanization of wood handling. Today, West Virginia moves about 93% of its pulpwood into the Charleston mill from concentration yards and hardly a stick is handled by hand. This represents a tremendous saving in time and money to the company. One man now does the job formerly done by three. Work that once took five days is now completed in two, with a drastic reduction in the amount of labor necessary to carry off the job. A concentration yard manager, crane operator and three laborers can load 72 flatcars of wood a week.

The Charleston mill's 20 concentration yards are divided into two sizes. The smaller yards, which handle an average of 400 cords a week, are manned by the manager, who also scales the loads as they arrive at the yard, and two laborers. Fork lift trucks are used to unload dealers' trucks and reload the flatcars. The larger yards, handling an average of 1,000 cords a week, have a manager, a crane operator and three laborers. Cranes are used in all loading operations.

WEST VIRGINIA'S PROCUREMENT EMPIRE. Map shows location of company's 20 concentration yards which speckle state of South Carolina. Heavy line separates Piedmont (north) and Coastal divisions. Summerville is headquarters for Woodland's Division.

GOOD WILL AMBASSADORS . . . It takes 100 people to run West Virginia's wood procurement department, 76 of them in the company's owned and operated concentration yards. There are 10 more at the mill and 14 operating in the field. Since the procurement area is divided into two sections, there are actually three divisions working under Cam Niederhof. One administrative, the other two directly responsible for purchasing and handling wood.

Each of the procurement sections is headed by a superintendent, with yard managers reporting to him. One of them, the coastal plains section, has yards at Darlington, Andrews, Lake City, Lena, Manning, Mullins, Orangeburg, Walterboro and the truck territory at Charleston. The Piedmont section maintains woodyards at Anderson, Chester, Camden, Greenwood, Jonesville, Lancaster, Laurens, McCormick, Prosperity, Rockton and Sharon. Each superintendent has, under his direction, from three to five foresters, a conservation forester and a maintenance supervisor, as well as all concentration yard personnel in his district.

Concentration yards serve as more

Is West Virginia's System a Success?

Since its inception in 1951, West Virginia's woodyard and pulpwood procurement system has proved its worth many times over. Here are a few of the advantages listed by company officials:

√ The company has found the concentration yard system to be an economically sound method of buying wood.

√ From the standpoint of supply, the system enables the company to maintain a more uniform flow of good quality wood to the mill.

√ Producers, dealers and railroads have found the system to their liking for a number of reasons, including economic ones.

√ The communities favor the system because it tends to stabilize the pulpwood business in areas where the yards are located.

√ From a public relations standpoint, the system is helpful because it permits the company to maintain direct lines of communication with the pulpwood-producing communities and to take an active part in community affairs.

than just wood stations for the company—they are an important part of its community relations program. Mr. Niederhof described his yard managers as "good will ambassadors" in the field. To the community, the yard manager IS West Virginia. He usually takes an active part in the civic and church affairs of the area in which he works.

When the company distributes free seedlings (last year: 3¼ million) they are given away at the woodyards, thereby familiarizing the public with its location and reminding it that the seedlings are a gift of the company, not a government agency. Foresters are on hand to demonstrate the proper way to plant trees and to keep accurate records of who gets them.

Superintendents regulate shipping quotas, designate shipping points to control freight costs, provide cruising and timber marking services, and personally know each pulpwood dealer, his background, capabilities, business integrity and ability.

WHERE TIMBER COMES FROM . . . West Virginia's yards operate in an irregular radius of about 20 miles —drawing wood from an area of 800,000 acres. In South Carolina, there are many other competitive yards, nine operated by International Paper and two by Union Bag, others by Bowaters, Rome Kraft and Champion.

Crawler type tractors are often used to skid trees out of the thick woods. These are mounted with power winches. Trees are cut with chain saws, loaded on trucks and delivered to the concentration yards. More than 80% of all pulpwood delivered to the mill is shipped by rail, the balance is shipped via truck to the Charleston mill.

THE DEALER SYSTEM . . . West Virginia purchases its wood directly from pulpwood dealers and has no business contact with pulpwood producers. Each yard gets its wood from three to seven reliable dealers, some of whom supply as many as five different yards. Some companies assign fixed boundaries to their dealers but not West Virginia.

Each dealer has a quota of pulpwood per week. An accurate inventory is kept of all wood sold to the woodyards and he is notified when his quota is nearly filled. This way, the dealer is always aware of how much more he must deliver and the company is never overstocked with wood.

The dealer handles all producer problems. He assists the producer in obtaining stumpage and equipment. The dealer acts in liaison capacity between land owners and producers. For this reason, West Virginia carefully selects its dealers, making sure they have a good standing in the community.

Some of the dealers own timberlands; stumpage is also made available from company-owned lands. Close liaison is maintained between these men and the company, and lines of communication are open for immediate handling of the separate problems.

WOOD MEASURING AND INVENTORY . . . A combination scale platform and office is located on each yard. As a truck load of wood is delivered, it stops beside the scale house where it is scaled and a scale ticket made out showing name of the dealer, producer, tract name, and the species of wood.

After the load is scaled, the truck proceeds into the yard where it is

SERIES TAKEN AT FOUR DIFFERENT YARDS BY PULP & PAPER shows how inventory is made. (Left to right) CLARENCE SMITH, at Mullins, S.C., scales logs, notes poor wood or holes in unit. Next, information card is stapled to unit at Darlington, S.C., yard by manager ED HILL. Another card is kept on file in office. BEVERLY PALMER, Manager at Rockton, S.C., computes weight and size of load and puts this information on both cards. ALVIN MCLOED, Camden, S.C., Manager, checks cards to determine when load was delivered. Every stick of wood is accounted for.

HYSTER REMOVES ENTIRE UNIT at one time, either stacks it in woodpile or places it directly on flat cars for shipping. Flat face of truck is used to bump overhanging sticks into place.

PERSONAL INITIATIVE IS ENCOURAGED. Here, CLARENCE SMITH, Woodyard Manager at Mullins, S.C., oils steel strapping and stores it to prevent rusting, experimenting to determine whether strap life can be prolonged.

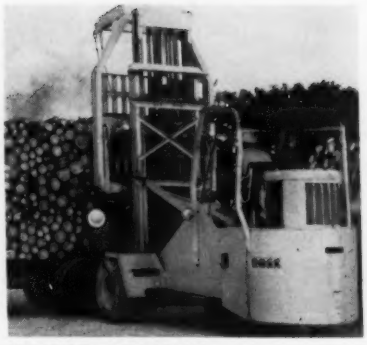
unloaded by machine and placed either on rack cars or stored in inventory. As the empty truck goes back by the scale house, a copy of the computed scale ticket is received. This ticket shows all measurements and net volume in cords. Three more copies of the ticket are retained and disposition made to the mill, the dealer, and the yard files.

When the producer, or trucker, presents his copy to the dealer, settlement is made in full, based on net cords shown. The dealer is, in turn, reimbursed when the original ticket is received by the mill.

An attempt is made to keep each concentration yard inventory at maximum level at all times. Each week a given quantity of wood is reclaimed and a similar quantity stored, unless weather or other factors warrant a change in the inventory level; but in no case is the wood permitted to get older than 16 weeks before it is reclaimed.

The wood is stored as follows:

Load is scaled in the usual manner; card of three sections, all bearing the same number and date, is separated at the perforations; two sections of the card are stapled to the load, one on each bundle; the section of the card bearing the net cords, scale ticket number, and date is filed at the woodyard office; the bundles are unloaded in the usual manner and banded with .050 x ¾ in. steel strapping; wood is stored in blocks of 200 to 400 cords and records are maintained separately for each block permitting a check of the inventory, block by block, and adjusting if necessary when discrepancies are located; the wood is stored in continuous rows for the full length of the block, which may contain from three



ROSS LIFT TRUCK prepares to remove half a truck load of wood at Mullins, S.C., concentration yard, stacks it in clean rows.

to seven rows, depending on the length of the block and the size and shape of the yard; when reclaiming wood, the storage card sections are removed and turned in to the yard manager each day; these sections are matched with the corresponding section on file and the volume is recorded as reclaimed, by dates, on the monthly inventory report.

KEEPING IN TOUCH . . . In an organization as spread out as West Virginia's wood procurement department is, communication takes on greater importance than usual. As Mr. Niederhof puts it: "Unless the men communicate often, they don't feel they are part of the organization." Communications, therefore, move from bottom to top and from top to bottom.

Frequent meetings are held and the men are brought in from the field at regular intervals so they never lose their individual feeling of association. Information pertaining generally to the company and industry is distributed among field men.

Division superintendents meet once a month to compare notes and discuss problems. Mr. Niederhof keeps in constant touch with yard managers, and other field personnel.

Every Monday morning, yard man-

IN LARGE 1,600-CORD YARD, HEAVY CRANE SWINGS INTO ACTION, transfers truckloads of pulpwood directly to flatcars. Once cars are loaded, heavy concrete block is used to ram overhanging logs in place, limit overhanging to 10 in.

FORESTER ED CATLIN (right) discusses land acquisition problems with CAM NIEDERHOF (left), when head of procurement department makes field trip.

agers meet all their personnel, primarily to accent new safety measures. The field safety committee, composed of members at large from the yards, meets the second Monday of every month to cull over ideas developed at the yard sessions. Every three months, a meeting of all field personnel, including woodyard managers, foresters, field superintendents, the administrative assistant and Mr. Niederhof, is also held.

Literature is passed freely to field people, including a monthly company newsletter to which each man is responsible for contributing two items (they may pertain to anything from birth announcements to news about accomplishments of men in the field or even sporting news). The monthly supervisor's newsletter is also distributed to all field men and woodyard managers.

National forestry, pulpwood and conservation publications are routed to all men in the field and woodyards. A standardization manual, similar to the mill's procedures manual, has been developed and sent out. This program, combined with the personal touch supplied by Mr. Niederhof, keeps the out-of-touch man in touch at all times.

Since its inception in 1951, West Virginia's woodyard and pulpwood procurement system has proved its worth many times over. West Virginia's neatly knit organization has gone a long way toward removing some agonizing problems faced by many wood procurement departments in the endless battle for the industry's most important raw material.

South Means Business—Down with Arson

● Stimulation of action at state and county levels to eradicate the wildfire menace in the shortest possible time was the objective of the greatest forest fire control meeting on record, the recent Southern Forest Fire Conference in New Orleans.

President Eisenhower saluted the 1,013 registrants including state governors, legislators, court judges, sheriffs and other law enforcement officers, district attorneys, county administrative officials, state foresters, and all ranks of forest land ownership from all Southern states.

Major support of the conference was from Southern pulp and paper companies, alarmed at what is happening in the South.

"Smokey the Bear," symbol of U.S. Forest Service propaganda against careless campers and hunters, was conspicuous by his absence, because it is not "carelessness" against which the South wishes to protect its newfound economic paper industry bonanza, but deliberate arson burning of the woods by wayward members of society.

There's always the case of the unconverted "free" cattle grazer who burns some other owner's woods in late winter so the green grass will come through lush and fast to revive his starving stock. This lush spring grass is really nutritious, but only for a few months prior to summer's heat. But, intermingled with and behind the front of this element is the arsonist who sets fire to houses when he thinks he can get away with it.

The South's pulpwood "house" is really on fire. Records show 85% of all forest fires are in the South; 89% of acreage burned is there, and 94% of all arson forest fires are there. In 1954, a half million Southerners worked in the forest industry. In 1954 the value of Southern forest products was $5,051,000,000. By 1975, if the arsonists are not put in jail or dissuaded, the value can be $15 billion. State groups selected leaders; arranged to extend the campaign to their own areas.

Sponsored by 11 national and regional organizations and endorsed by the Southern Governors' Conference, those attending were welcomed by Louisiana Gov. Robert F. Kennon. Don P. Johnston, American Forestry Assn. president, responded by noting "this conference means business." Warren T. White, assistant vice president, Seaboard Airline Railroad, presided.

WHAT THEY SAID . . . "Southern forests are producing less than one-half their potential," said John A. Sibley, board chairman, Trust Co. of Georgia (Atlanta), who pointed to forest industries as lifting the South from post Civil War doldrums. "Paper mills," he said, "are putting a flooring under the price of farm land, never before enjoyed by a farmer."

"Law enforcement," said Frank Ahlgren, editor, Memphis Commercial Appeal, "is just as effective as the community wishes it to be." He called attention to high percentage of arson woods fires by juveniles.

"Forests of the South won't be an ever-increasing source of wealth and prosperity if we let wildfire run through them," said Richard E. McArdle, U.S. Forest Service chief.

"Juries will convict a defendant for stealing a boy's bicycle but some jurors have trouble in penalizing a woods burner causing a $50,000 loss," said Boyce Holleman, Wigging, Miss., district attorney. "Some people think they have an inherent right to burn the woods because their grandparents did so."

A circuit judge suggested that legislatures require judges to make a mandatory review and report on forest wildfires in counties. Another judge said: "The time for education is past; it is time to use the big stick."

James W. Craig, former Mississippi state forester, urged delegations to go home and unite all interests and organizations into effective action. A summarization was by Henry Malsberger, manager-forester, Southern Pulpwood Conservation Assn., Atlanta.

CLINTON D. ST. CLAIR is new Pres. of Quick-Way Truck Shovel Co., Denver, Colo., a subsidiary of Penn-Texas Corp. Mr. St. Clair is currently Vice Pres. of Mfg. of Penn-Texas; previously he was with Rudolph Wurlitzer, and Lunkenheimer.

A PULP & PAPER EXCLUSIVE:

APA Looks Over Its Pulpwood "Champs"

Southwest draws composite picture of best producer; looks into dwindling manpower, increasing wood demand

● What makes a really top-notch pulpwood producer top-notch?

The Southwestern section of American Pulpwood Association came close to finding the answer in a stimulating spring meeting held in Mobile, Ala.

Three months before the meeting Chairman Tom Busch and Jim Holekamp, APA's logging engineer, had circulated a printed form among woodlands managers of top paper companies represented in the association. The form requested vital information from each company on the one producer they felt was tops in their organization. At Mobile these reports were presented in the form of "papers" and then studied to see just how they compared. The result: A pretty clear profile of the ideal producer and what makes him that way.

International Paper's Mr. Busch got the meeting off to a start on manpower problems. It gathered a full head of steam and never slowed down.

LOSING MANPOWER . . . Said Mr. Busch: "Production per man-day in our woods operations is not much greater than it was 20 years ago. We are one of the few industries in which this is true. Of course we've had some improvements—better power saws, better trucks, other things. Ten years ago I wouldn't have taken a power saw as a gift and today they are pretty close to indispensable. But we're losing our manpower!

"Five years ago, we required 13 million cords of wood. Today, we need 17½ million cords. And as our requirements go up, our manpower supply is going down. Indoor plumbing and bright lights are stealing our labor out from under us. In 1930 the rural population was 13¾ million, the pulpwood requirements were 2¾ million cords. In 1956 we estimate the labor population will be down to 8 million and the cords required up to 17½ million. Not only that but only about 30% of the manpower produces all of the wood—the rest are transients, one-load-a-year boys.

"The problem is pretty clear. By 1970 we'll have a 30% shortage of manpower to produce the wood we need. In order to fill that gap we've got improve our production methods. We've got to find out who the really top producers are and why and then we've got to start making producers to fit that mold."

(A month almost to the day later, J. E. McCaffrey, International Paper's vice president in charge of woodlands, told a meeting of Southern Pulpwood Conservation Association that we are now seven years ahead of schedule in pulpwood cutting. According to his figures, 21 million cords will be cut in the South in 1956—which merely compounds the problem already presented by Busch.)

SOUTH'S PULPWOOD PRODUCING GIANTS . . . Companies which discussed their top producers included pulpwood operations from just about every type of woods job there is in the South, from marsh areas to the mountains and into the Atlantic coastal plain. For obvious reasons, the producers will not be identified by the company for which they work.

No. 1 Producer: "Our man replaces his truck every 12 months, as soon as it's paid for. This stabilizes his payments at about $175 a month. He gets an oil and grease job once a week, whether he feels the truck needs it or

MUCH DISCUSSION AT SOUTHWESTERN APA MEETING. (Left) McCulloch's FRED ROLLER tells group "improper operation can reduce saw life 75%"; (middle) Chairman TOM BUSCH, of International Paper, discusses "ideal producer" with APA Logging Engr. JIM HOLEKAMP; (right) APA Exec. Secy. BILL BROMLEY called meeting "one of finest I've ever attended."

not. In the woods, his five man crew all helps to load and spot the truck, to keep it off stumps and out of the swamps. He's made a careful study of time-saving measures in the woods. When his sawyer finishes his last cut on a tree, he doesn't move, the limbers feed the stuff to him. He says this saves time."

Producer No. 2: "This man is conscientious. His crew has been with him a long time. Youngest man has been in the crew three years. He has a definite system in the woods—each man has a specific job and they never deviate from that system. When the producer is sick, the whole crew lays off. He doesn't delegate supervisory jobs. Nobody on the crew is related to each other— this may sound silly but it appears to be pretty important."

Producer No. 3: "Here is a producer who is forest-minded and actually helps to put good forestry practices across to tree farmers. He helps them pick out stuff that ought to be out. His relations with landowners are excellent. His relations with the company are excellent. He has a good name in the community and never has any trouble getting stumpage."

Producer No. 4: "We've got a man who is extremely hepped on the question of mechanization. He has his own machine shop and does all his own repairs to save money. He works in the shop on rainy days. When costs get too high anywhere along the line he takes a day off and figures out how to shave them down. He really appreciates the dollar."

Producers No. 5: "Mechanization of woods practices seems to be our man's secret. He constantly works to figure out new ways of doing things—invents new gadgets to help cut the work load for his men. Some of his inventions are so good we've held barbeques and invited other producers in to see movies of some of his equipment in action. He's been able to keep his crew together by cutting work corners for his men."

Producer No. 6: "Carries workmen's compensation and social security, has good books and really watches the dollar. This seems important to his operation. His men have security and he knows where he stands all the time. The result is complete understanding between producer and workers."

WHAT THE IDEAL PRODUCER LOOKS LIKE:

1. ABILITY TO SUPERVISE—must ramrod the job constantly, is always in the woods, does not delegate supervisory authority.

2. FORESTRY-MINDED — gets forestry across to landowner, has good relations with landowners and tree farmers, has respect for forestry practices, knows what is good to cut, good to leave growing.

3. HONESTY AND INTEGRITY IN DEALING WITH LANDOWNERS—has good public relations with farmers and landowners, they trust him.

4. MECHANICALLY-MINDED — always alert to improve on machinery when possible, handles own repairs to save money, tries new ideas to find best usable supplies.

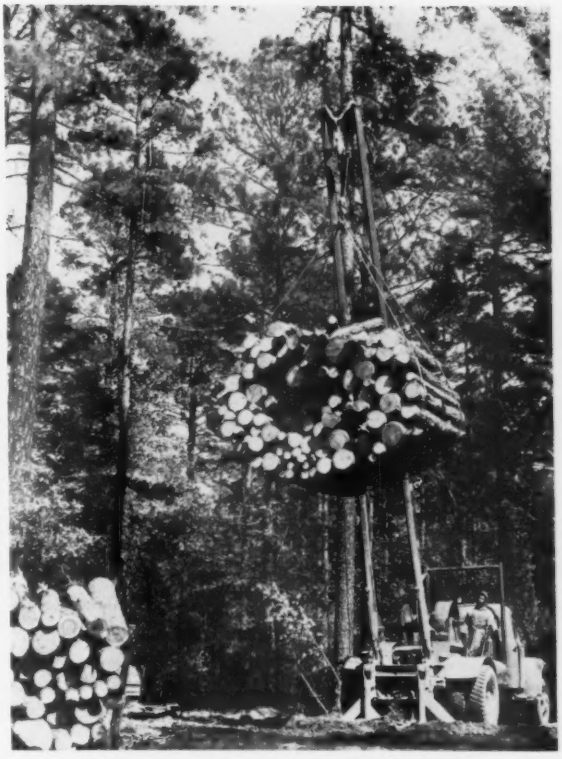
5. ABILITY TO MANAGE MONEY—doesn't go heavily in debt for extra equipment, keeps men happy by paying them on time, analyzes costs and takes care of them when they threaten to get out of hand, carries workmen's compensation and social security on his men.

6. HAS A GOOD CONSCIENTIOUS CREW—men work as a team, have specific jobs, do not deviate from well organized system, stay with producer a long time, are not related, are doing jobs they are best suited for.

7. HAS GOOD EQUIPMENT—takes care of trucks, saws, tractors, woods equipment, trades when supplies begin to depreciate, is careful to have the best equipment for the job, knows the value of mechanization and mechanizes jobs when possible.

8. INCENTIVE TO KEEP WORKING—knows that he can sell to company as long as he does a good job, company helps to make job as easy as possible for him by using correct measuring methods at yard, helps him by supplying latest information on equipment and tools and by offering advice whenever it is needed.

10. GOOD RELATIONS WITH COMPANY—gets along well with men in company and is willing to follow suggestions when offered, knows value to company, has a sense of responsibility to himself and to company.



MECHANIZATION IN WOODS has helped to boost production, cut labor costs. But production per man day has improved very little in last 20 years, says Tom Busch. Other industries are way ahead in boosting man-day production. (Pulp & Paper Photo.)

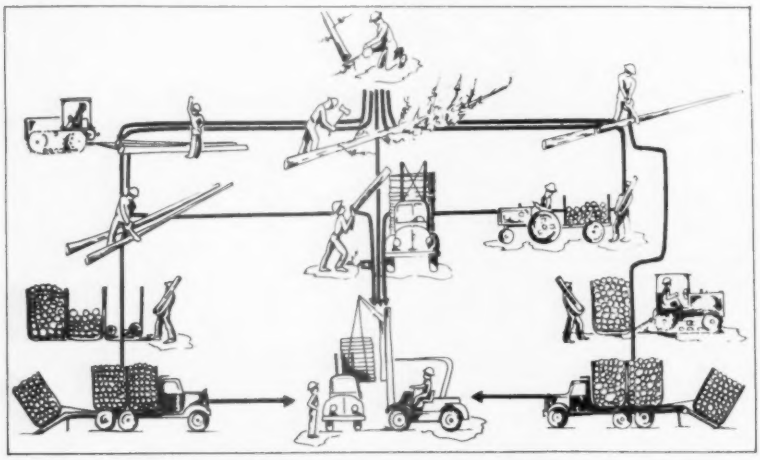
NEW MACHINES . . . On the second day, there were motion pictures and demonstrations of several new types of debarkers and chippers. Adrian Ringland, vice president of Jackson Industries, Birmingham, Ala., discussed the Jackson mechanical log debarker and demonstrated with motion pictures. He also described a new 11-in. chipper which is now in operation in two mills. The Nicholson 26-in. Roto-Barker was described by representatives of that company and A. L. Meady of Portland, Ore., demonstrated the Norman chipper with a remarkable movie taken at 4,000 frames a second. Fred Roller, of McCulloch Motors Corp., discussed power saws in general, pointing out:

"We find many operations in which the equipment just isn't treated right. Men are using too big a saw for the job and often it being operated by men with utter disregard for the equipment. This can reduce the life of a saw by as much as 75%"

R. D. Salter, of Caterpillar Tractor Co., described experiments being used to develop new equipment.

Disneyland ? Nope—New Wood Ideas . . .

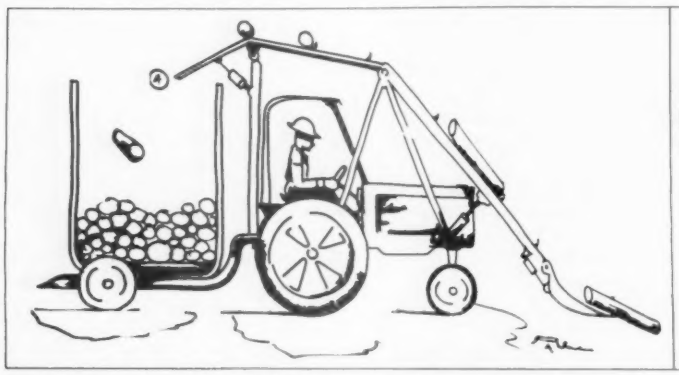
Is the Southern industry facing a manpower crisis in woodlands? Manpower supply has decreased 4½ million, pulpwood demand is up 15 million cords in the past 25 years. The next five could be even more critical. Production in man hours is increasing—but still lags behind most other industries. Here is a special report on how Southwestern section of APA is tackling the problem.



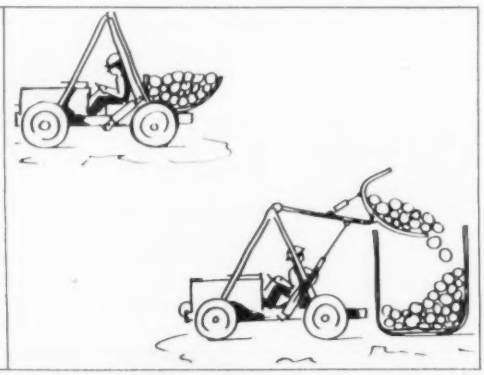
SOME WOODLAND "GREMLINS" are shown in Mr. Walbridge's graphic drawing of woods operation. Loading heavy sticks above the waistline is costing producers production and workers, he says.

• As the first day of the Southwestern APA meeting was drawing to a close, Chairman Tom Busch introduced an energetic young speaker from Bowaters Southern named Tom Walbridge. His topic was cryptic: "New and Promising Approaches."

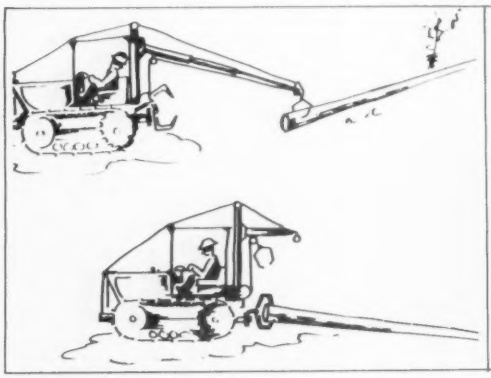
Following what had been a highly successful and informative session that had begun at nine that morning, any speaker might have found himself the victim of anti-climax. Instead, however, Mr. Walbridge peeled off his coat, rolled up his sleeves and, like a fugitive from Disneyland, began plastering the walls with animated drawings. Once he launched his rapid-fire sermon on what he wanted in the



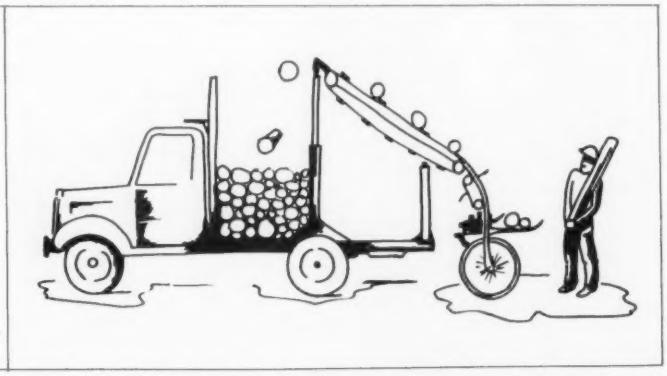
"GIVE ME A LIGHT, PORTABLE CONVEYOR that would carry the sticks over the cab of a tractor and drop them in the pallet." Workers could drop sticks on conveyor, straighten wood as it topples into the pallet behind tractor.



"A JEEP WITH A HYDRAULIC TRAY ON THE BACK could run through the woods and men could load it as it passes. Then the tray could be lifted and dumped into the pallet."



"HOW ABOUT A TELESCOPING SET OF TONGS that would pull the log up to the hooker on the back tractor. Whole logs could be moved with ease that way."



"I'D LIKE A LIGHT, TRANSPORTABLE CONVEYOR that could attach right to truck and follow it along. Workers could drop sticks in the apron and they would be flipped right into the truck. Straightening them would be a lot easier than lifting them over the head and loading them."

BOWATERS' TOM WALBRIDGE . . . "a pretty rare article—imagination."

way of woods equipment from suppliers, the audience was all ears. Several men present requested copies of the pictures taken of his drawings by a PULP & PAPER editor present.

Said Mr. Walbridge: "The really tough part of any pulpwood operation is loading trucks or pallets once the wood has reached the waist level. When the laborer has to reach above his belt to load a heavy stick, he's using extra energy and losing interest. Reduce this terrific work load and you're increasing production . . . and you won't be chasing the producer's men off to the city lights."

Although Mr. Walbridge aimed his talk at suppliers, Chairman Busch offered a better suggestion: "You men ought to go back and get on the machine shops at the mill. They could spend a little time and money experimenting on some of these ideas."

While he admitted a touch of the "Rube Goldberg" might have gone into the conception of some of his ideas, Mr. Walbridge had attacked some of the more enigmatic of the pulpwood producer's problems. The general opinion was that all his ideas filled a desperate need in the woods—and some were highly plausible.

As Mr. Busch said: "Tom Walbridge possesses a very rare article to find these days . . . he's got imagination and he knows how to use it."

Close Utilization Prevails On Rayonier Gyppo Shows

Some Western loggers cuss the little logs left on a hillside after all the big sawtimber has been removed. But A. E. Burdick, Forks, Wash., is proud of the runty pieces he is taking out. He is gyppo logging Rayonier Inc., company-owned pulptimber for their 350-tons per day bleached sulfite pulp mill 60 miles away at Port Angeles.

Recently he was operating a high-lead show, "patch-logging" a million bd. ft. off a setting covering 33 acres. He yarded everything down to 6 in. in diameter and big enough to get a choker around. Logs 17 in. in diameter and up are loaded onto trucks for transportation to the Rayonier transfer at their railhead near Forks (in picture).

Logs 17 in. and under are truck-logged with lighter equipment direct to the salt water dump at the Port Angeles mill and strapped before dumping.

WHERE BIG LOGS ARE TRANSFERRED.

Rayonier Inc.'s log transfer (near Fosko, Wash.), where off-highway loads are transferred directly from trucks with 9 ft. bunks onto cars of company-owned railroad. These cars are dumped at Sekiu, 35 miles north on the Strait of Juan de Fuca; then logs are rafted 50 miles east to Rayonier pulp mill at Port Angeles. Two Signode steel straps are placed around each car load; cinching is by semi-automatic device operating off hydraulic motor.

Change blades in 30 seconds ...sharpen in 5 minutes

Right on the job!

only possible with the new, improved

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There is only *ONE* WRIGHT SAW.

EFFICIENCY-PLUS—The Wright Power Saw has been completely redesigned with the individual pulp-wood cutter in mind. Changes blades as easily as your razor, sharpen 'em in 5 minutes—*on the job!* Everything about this great new tool makes for less work, greater production, at lowest possible maintenance cost. Works on "handsaw" principle with *reciprocating straight-blade.* Fewest possible moving parts mean long, trouble-free operation.

SAFETY-PLUS—You can't buy a safer power saw at any price. Won't grab or kick. Practically vibrationless, lightweight... reduces operator fatigue—a major cause of accidents. No chain to "throw"—*only* the cutting area of blade exposed.

VERSATILITY-PLUS—Fells, limbs, bucks, underbucks, even strips bark. Does everything a hand-saw, ordinary power saw and axe can do—faster and better.

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Holds U.S. Responsible for Timber Loss

W. D. (BILL) HAGENSTEIN, Far West forester: "No. 1 problem out here is to get the U. S. Government to practice good forestry."

The No. 1 economic problem of the Pacific Northwest "is getting the United States Government to practice good forestry," according to W. D. "Bill" Hagenstein, newly elected executive vice president of the Industrial Forestry Assn. headquarters at 1410 S.W. Morrison St., Portland 5, Ore.

"The forest industry's rapidly changing technology of the past 10 years has added 100 billion bd. ft. to the regions' timber inventory. What good of this, if the government's share is not harvested before it is lost to use?" he asks.

Mr. Hagenstein reports that "every forester knows" there is infinitely more timber than the quantities the government uses for calculating the rate at which it should harvest its old growth forests. This, he says, creates an artificial timber shortage, skyrockets timber prices, makes wood products more expensive, puts Northwest industry at a disadvantage with competitors in the nation's markets, and could adversely affect job opportunities in the far West.

"It's a crime," he said, "that young timber, now in its peak growth on farm woodlots, must be sacrificed to premature cutting when Uncle Sam's old growth timber at the heads of the creeks is deteriorating away."

He charges the government fails in these respects: (1) doesn't know accurately how much timber it owns, (2) doesn't have an adequate timber access road system, (3) doesn't have a realistic rate of timber harvest under sustained yield, and (4) doesn't sell what it estimates to be the annual allowable harvest.

Besides, he stated, the government's timber inventories are sadly out of date.

The forester cited the congressional hearings held on government timber management in Washington, Oregon and California last fall. He said they were most significant that for the first time in 15 years Congress studied forestry on the Pacific Coast. "In 1939," he said, "they were studying primarily the problem of private forests. This time they were looking into the government's vast storehouse of unmanaged trees."

According to Mr. Hagenstein the present shortage of trained foresters presents a serious problem to both government and industry. The prophets of timber famine had discouraged young men from entering forestry because of propaganda that the nation was running out of trees. "Nothing could be further from the truth," he says.

Talk of New Pulp Mills in Montana

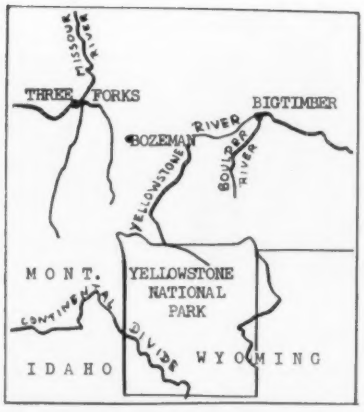
Biggest National Forest timber sale in history in the Rocky Mts. area of Colorado to J. & J. Rogers Co. of Ausable Forks, N.Y., has raised hopes for more pulp mills in other Rocky Mts. forest areas.

"Eventually pulp mills will be built on the east side of the Continental Divide in Montana," U.S. Forest Ranger Alban Roemer told a Big Timber, Mont., audience. The Northern Rocky Mts. station of the U.S. Forest Service estimates enough green wood in that area, principally in south central Montana, for six 200-ton pulp mills.

At Big Timber, Ranger Roemer said there is plenty of water in the Yellowstone for a mill. Several national forests are to the west, south and north of Big Timber, which is on the Northern Pacific R.R. A sawmill which can cut up to 40 million bd. ft. a year, with residue wood available for pulp, is just 30 mi. west of Big Timber.

Within a 100-mi. arc northwest to southwest of Big Timber, is source of most of the pine cut and shipped to Thilmany, Mosinee and Nekoosa-Edwards mills in Wisconsin in recent years. Bozeman has been headquarters for these logging operations.

Three Forks, where the Missouri begins, flowing north to Great Falls and then East, is another Montana town often mentioned as a possible pulp mill site. The Gallatin, Jefferson and Madison Rivers join here.

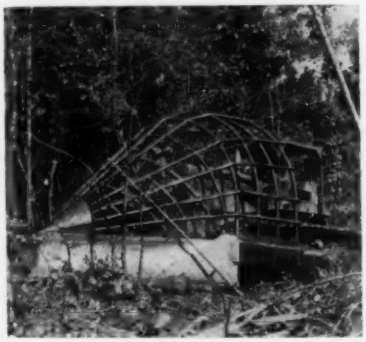


Pulp Mill for Big Timber, or Three Forks?

These possible sites in south central Montana are often mentioned, as they have transportation, abundant water and are close to several national forests. There is much green timber here—all north and west of Yellowstone Park. Farther west and farther north there are hundreds of square miles of dead or dying forests—a huge lodgepole pine blowdown and spruce insect infestation—all in national forests. The Continental Divide runs east and west here on this map, but a short distance west it swings north and northeast through Montana.

Mr. Roemer said federal law requires big timber allotments must be sold to the highest bidder and the USFS must provide access roads. Lodepole pine, spruce and Douglas fir are principal species.

In past years, one big paper company, at least, was seriously interested in Montana for a mill but discontinued negotiations because it claimed the USFS stumpage prices were too high, assistance offered by USFS was niggardly and logging and water problems were too discouraging.



THIS GIANT MOLE is actually International Harvester's tractor-powered brush and timber clearing rig burrowing through 23,000 acres of timber in Georgia. Rig is mounted on a 200-hp International TD-24 diesel crawler tractor. Cutting blade is 13-ft. long, 14-ft. wide and is made of 1.5-in. mild steel. Umbrella-type framework is 2.5-in. pipe, designed to protect operator from falling timber.

Pulpwood Personals

A. H. BRANDIS, of Longview Fibre Co., and **J. S. BRANDIS** (his son), of Georgia Pacific Plywood, were respectively elected vice president and treasurer of the Industrial Forestry Assn., Portland. **W. D. HAGENSTEIN,** top forester of Industrial Forestry, was elected executive vice president. . . . **J. V. PERRIN** of New Brunswick International Paper Co., has been re-elected president of the Quebec Forest Industries Assn. **J. H. MERRILL,** woods mgr. of Anglo-Canadian Pulp & Paper Mills, was elected vice president.

KENNETH B. POMEROY, one of top forest management research specialists in the U.S. Forest Service, based at Upper Darby, Pa., has been appointed chief forester of the American Forestry Assn. . . . **JOHN H. BORK,** district logging supt. in the Parmachenee area, has been promoted to assistant general logging supt. of Brown Co., Berlin, N. H., announces Vice President **C. S. HERR,** who said Mr. Bork will assist **STANLEY H. WENTZELL,** general logging supt. Mr. Bork has been with Brown's Woods Dept. since 1950, starting as a pulpwood buyer.

Texas Forestry Assn. is taking early precautions against maliciously set forest fires which constitute about 20 to 25% of the tree loss due to fire every year. Association is offering a reward of $250 for information leading to the arrest and conviction of anyone willfully setting fire to East Texas woodlands . . . **E. L. MOLPUS** has been appointed supt. of Union Bag & Paper Co. woodlands division land dept. He succeeds **C. H. CANNON, JR.,** who resigned. **C. R. MORDECAI, JR.,** former field rep in the company's land acquisition department, succeeds Mr. Molpus as supt. of the conservation dept.

ROGER W. WOLCOTT, of Raleigh, N. C., has been elected president of North Carolina Forestry Assn. **RALPH EDWARDS,** of Morgantown, is first vice pres., **G. E. JACKSON,** of Washington, second v-p, **C. J. BLADES,** of Charlotte, third veep and **R. W. GRAEBER,** of Raleigh, is secretary-treasurer . . . Mr. Jackson was also named chairman of the North Carolina Forestry Council. He will be assisted by **JOHN GRAY,** extension forester of Raleigh, who is vice-chairman, and **F. H. CLARIDGE,** secretary . . . **KENNETH B. POMEROY,** one of top forest management research specialists in U. S. Forest Service, has been appointed Chief Forester of the American Forestry Association. He takes office July 1.

FRANCIS McCANN, former chief lubricating engineer, Brown Co., is now superintendent of wood dept., Burgess mill. He joined Brown in 1923 and will now have supervision over pulpwood storage, handling, preparing and chipping depts. . . . **KEN NORCOTT,** chief forester for Brown Co., has been elected to the exec council of the New England section of the Society of American Foresters. . . . **A. V. BACKMAN,** until recently manager of the Franklin River logging operations of MacMillan & Bloedel, is assistant to director of forest operations, **CHARLES B. DUNHAM,** in Columbia Cellulose Co. He will live in Vancouver, B. C., and work out of head office on special forestry and engineering assignments.

E. R. WAGONER is new exec. secy. of Texas Forestry Assn. . . . **B. E. ALLEN,** asst. mgr. of woodlands for Union Bag, **C. H. COULTER,** Florida state forester at Tallahassee, and **P. A. BRIEGLEB,** dir. of Southern Forest Experiment Station at New Orleans, all have been elected to the Council of Society of American Foresters . . . **CHARLES H. FLORY,** State Forester of South Carolina, has been selected Man of the Year in Service to South Carolina by Progressive Farmer Magazine . . .

CONSERVATION OFFICIALS DIRECT "GET" ACQUAINTED" MEETINGS. At Panama City meeting of SPCA, B. F. KARLICK, SCS area conservationist; H. G. CLAYTON, dir. of extension service; C. H. COULTER, Fla. state forester and H. J. MARLSBERGER, manager of SPCA, helped direct talks to create better understanding and cooperation between pulp and paper industry and tree farmers.

Industry-Farmer Confabs Spur Cooperation

• A program calling for closer cooperation between the industry and small landowners, started in Florida by the Southern Pulpwood Conservation Association, may be expanding throughout the entire SPCA area.

The purpose of the industry-agriculture sessions is to emphasize the common advantages for both pulp and paper mills and agricultural workers to improve forest practices, according to Henry Marlsberger, general manager of SPCA.

Two recent "get-acquainted" meetings held in Florida attracted such widespread interest and attention that SPCA is seriously considering expanding the plan throughout its Virginia-to-Florida area. A two-day session in Jacksonville lured personnel from 26 northeast Florida counties. Another meeting in Panama City attracted people from 18 northwestern Florida counties.

Container Corp. of America at Fernandina Beach, Hudson Pulp and Paper Co. and St. Regis at Jacksonville hosted the Jax meeting and International Paper's Panama City mill shared host honors with St. Regis at Pensacola at the other get together.

Talks were designed to explain the industry's land ownership policies, wood procurement systems and services to landowners. Then open discussions were used to begin strengthening cooperative efforts between company field men and tree farmers.

The second day of the meetings included a tour of industry forests, with practical demonstrations on conservation and cutting and a tour through the paper mills.

Two more meetings are scheduled for Pasadena and Lufkin, Texas, later this summer and a second series of meetings will be held in Florida later in the season.

New Saw Is Speedy

A new 5 hp, 19 lb., direct drive chain saw announced by Homelite, combines many features designed for easier, faster and more profitable wood cutting. Called Model EZ, this new saw was developed for farmers, pulp cutters, etc. Its 19 lbs. is perfectly balanced, and an all-angle diaphragm carburetor allows cutting in any position—up, down, left, right and even upside down. Available with 12, 17, 21, 25 and 30 in. guide bars, performance tests show EZ will cut through 8 in. oak in 5 sec., 18 in. pine in 14 sec. Write Homelite, 75 Riverdale Ave., Port Chester, N. Y.

Now! 7 Horsepower

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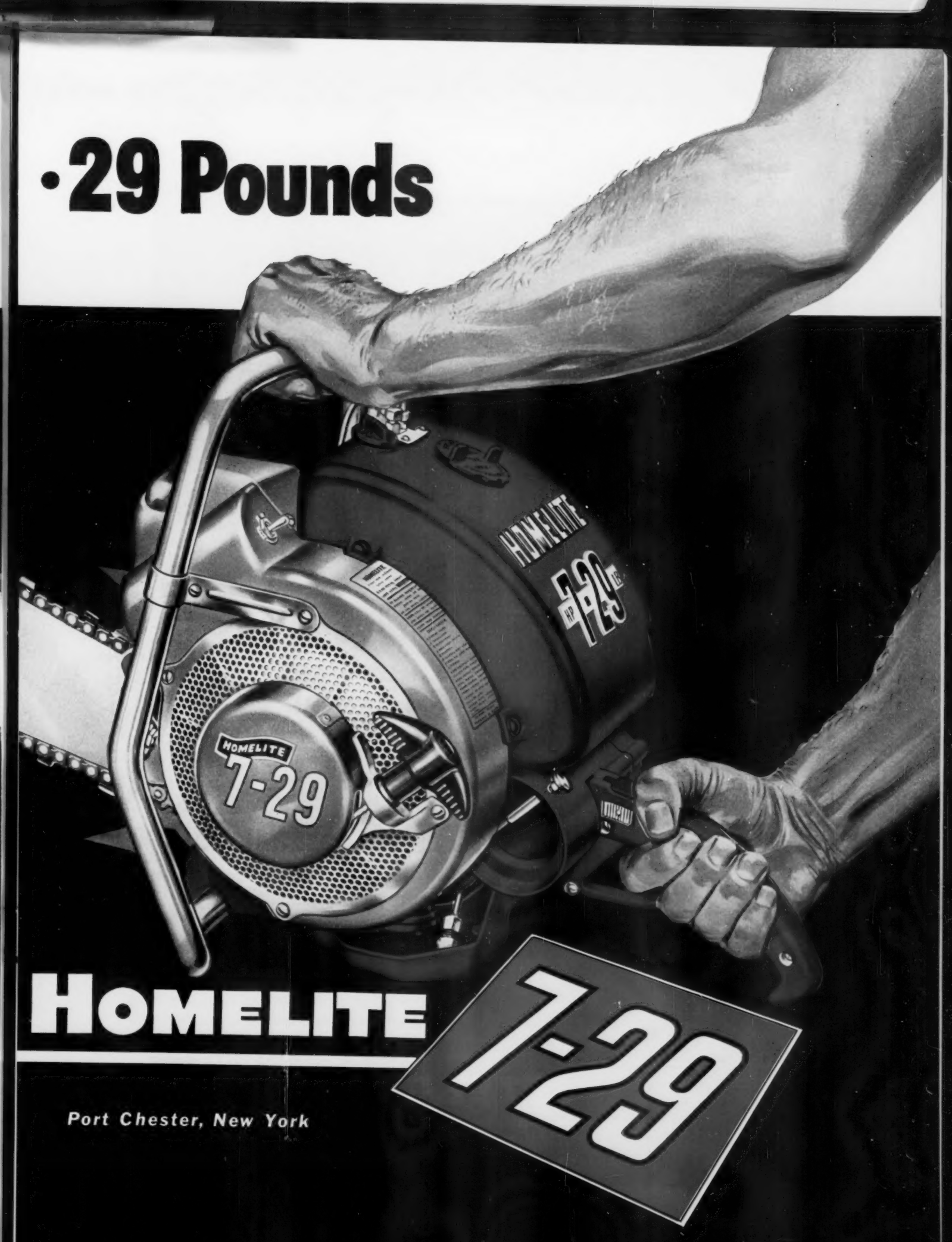
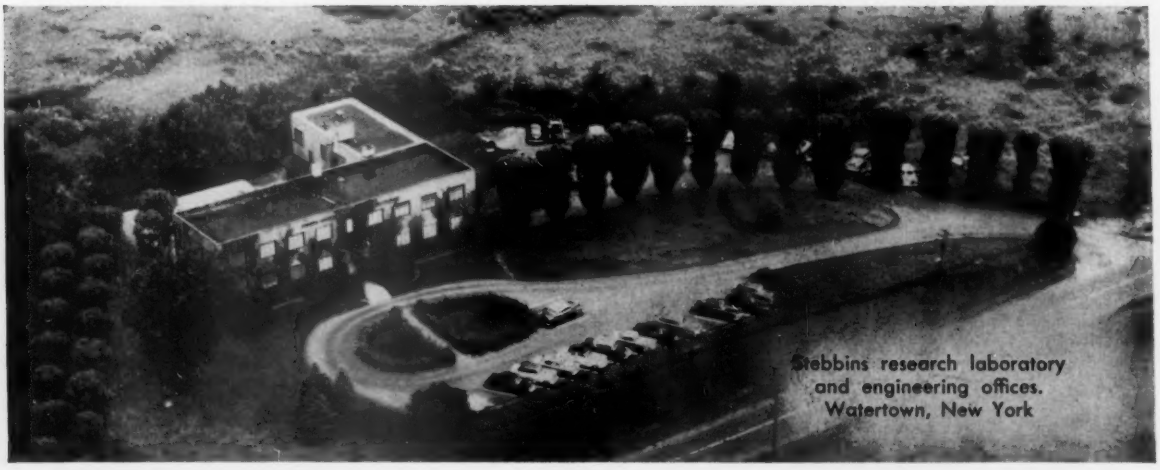


HOMELITE 7-29

Port Chester, New York



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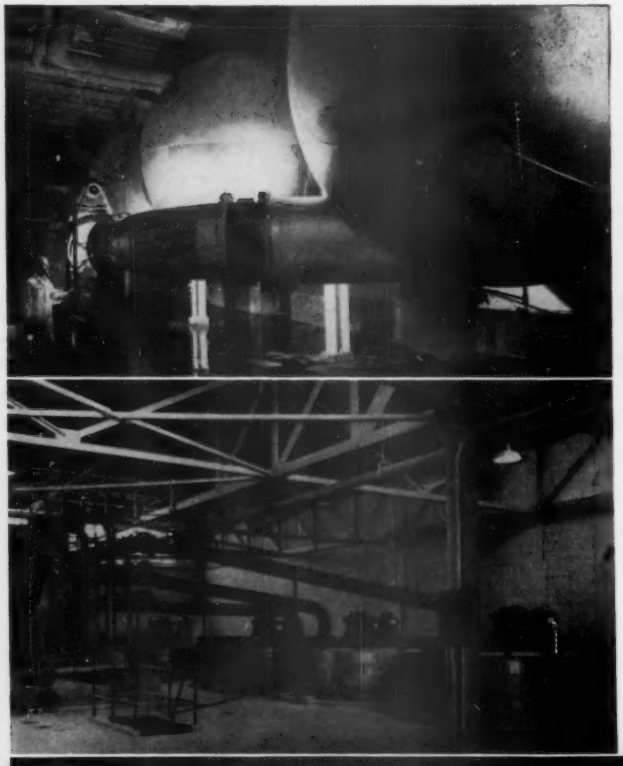

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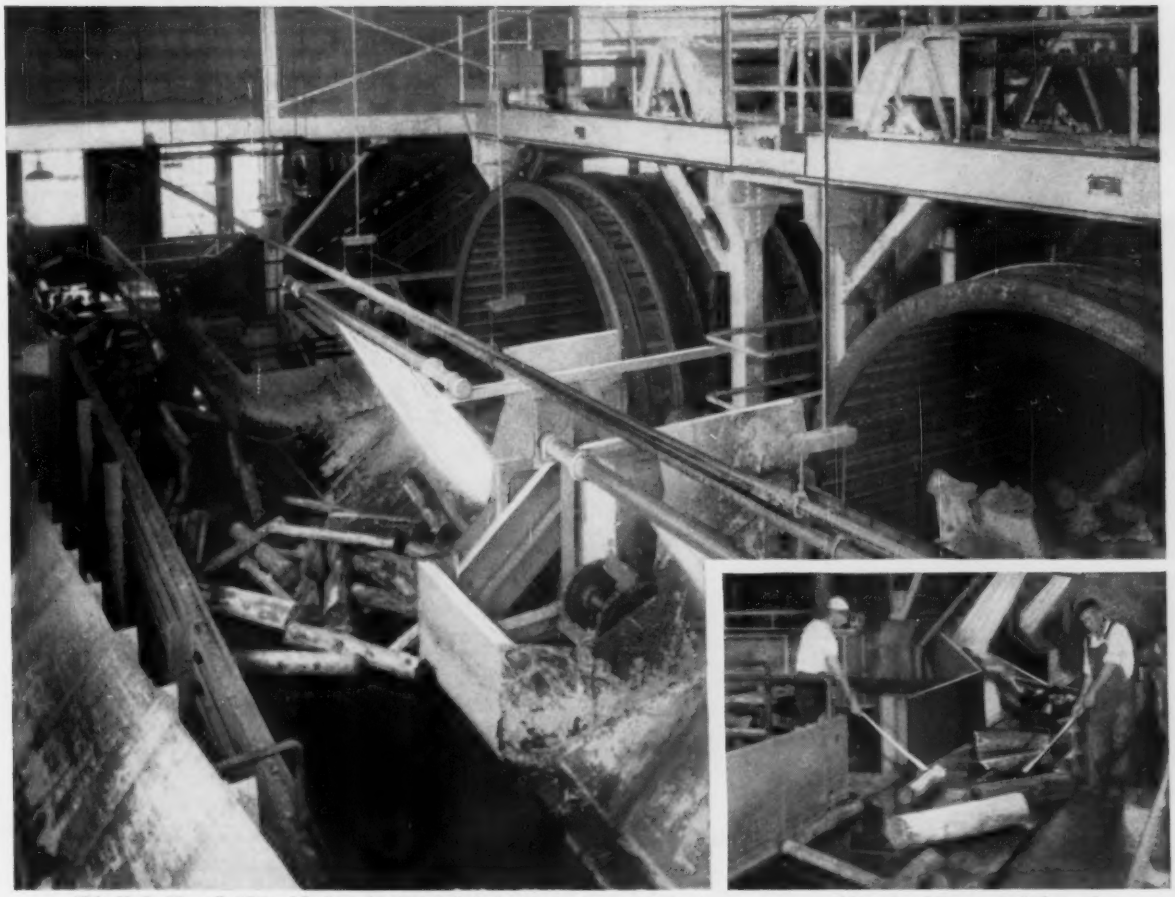
Logging a new record!



This U. S. Giant® 60" wide Log Sorting Belt is built to withstand the heavy impact of logs tumbling onto it from the debarking drums (left) and to resist the sharp points of the pickaroons which the men use to sort out rejects (right).

When the Mosinee Paper Mill Company, Mosinee, Wisconsin, required a conveyor system to step up production of wood and pulp, they turned to the company that had helped with the same problem on many installations in the United States and Canada—U. S. Rubber.

"U. S." engineers studied the requirements, the mill layout, and—above all, the problem of costs. Eight "U. S." conveyor belts were installed, made endless on the job. Production went up to a new record for the log-sorting operation of Mosinee Mills.

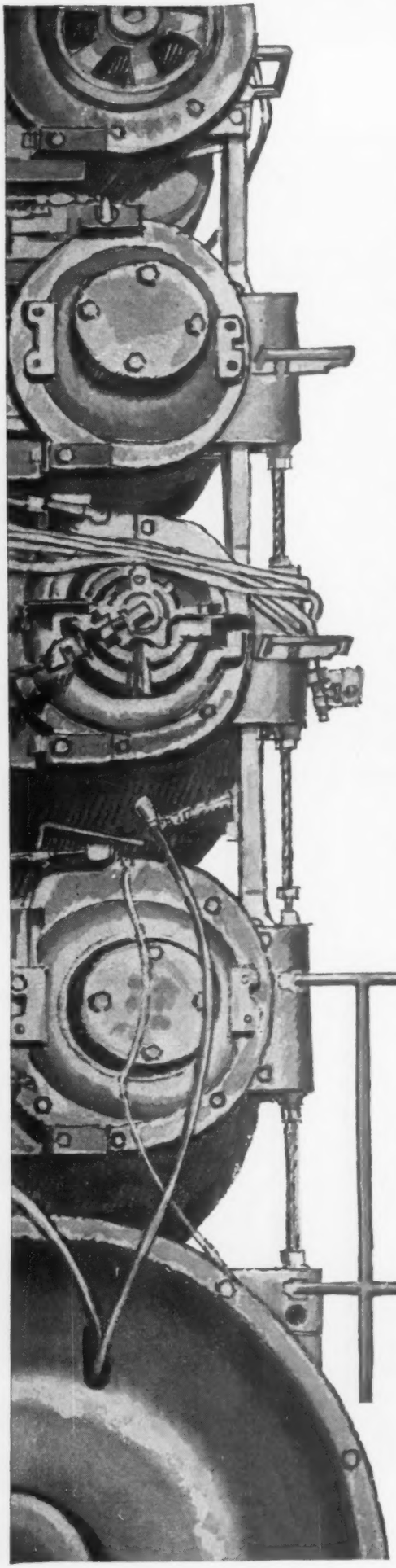
The easiest and most economical way to increase haulage and to lower costs is to get in touch with factory-trained United States Rubber conveyor belt engineers. Their wide and varied experience in materials handling for the wood products industry allows them to give you the very best help obtainable.

Write or phone any of the 27 convenient "U. S." District Sales Offices or contact United States Rubber, Mechanical Goods Division, Rockefeller Center, New York 20, New York.

See you at the annual meeting of American Pulp & Paper Mill Superintendent's Assoc., June 12-14, Lake Placid, N. Y.

US RUBBER Mechanical Goods Division

United States Rubber



To the mill executive who decides on lubricants—

Three good reasons for specifying STANOIL Industrial Oil

1 The increased demand for paper products results in machinery being operated at speeds higher than rated capacity. Continuous production has placed greater burdens on lubricating oils. Without the best lubrication, equipment failures may occur. Best idea is to specify STANOIL Industrial Oil.

2 Cost of repairs and replacement of parts added to the loss of production, run many times the cost of lubrication. A small investment in STANOIL Industrial Oil is the best possible protection against bearing failures, repair costs and production loss.

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Get more facts about STANOIL from your nearby Standard Oil lubrication specialist. There is one near you in any of the 15 Midwest and Rocky Mountain states. Or write Standard Oil Company, 910 South Michigan Avenue, Chicago 80, Illinois.

Quick Facts About STANOIL Industrial Oil

- **Stability**—STANOIL's antioxidant gives oil resistance to chemical change, minimizes deposits.
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- **Resists Effects of Temperature Change**—STANOIL has high viscosity index, is resistant to temperature change. Lubricates in both high and low temperature service.
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Figure H-10, as shown at left, and figure V-20, as shown below. Both valves are furnished in 1½" I.P.S. male threaded ends. Larger sizes can be furnished on special order.

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No old sample
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For a long time industries handling heavy slurries have needed a valve which will allow them to take an immediate sample without having to clean out old plugs of slurry and which could be depended upon to close off after the sample was obtained. The Strefco Figure H-10, or V-20, fill this need by placing the seat and disc in the main flow stream and by using a knife-edge seat against a conical disc.

The Strefco Figure H-10, or V-20 valve can be screwed directly into the wall of the pipe where thickness permits, or can be installed through a half coupling in thin wall pipe. Material of construction can be the alloy which best suits your process. For special application in light slurries a Teflon seat can be utilized to insure tight shut-off.

Strefco Figure H-10, or V-20 can also be supplied with a handwheel or adapted for remote air operation.

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REPORT FROM PENJERDEL

How to Use Your Dryer Rolls Safely

● With the entire industry engaged in a breathtaking race to keep pace with consumer demand for paper, older machines are being pushed to limits beyond that ever dreamed by their manufacturers. One result—a subject of concern among boiler insurance companies—is the increase in paper machine dryer head failures and even rare disastrous explosions.

"There are many paper machines using cast iron dryer rolls 30 years and older, says Bergen J. Roof, supervising engineer, boiler and machinery division of American Guarantee & Liability Insurance Co. at the Baltimore Penjerdel (Pennsylvania-New Jersey-Delaware) spring meeting, superintendents paid strict attention as Mr. Roof told them how to test maximum safety pressure they could put into their dryer rolls. Accompanying photographs showed what can happen when these safety factors are ignored.

"When these old dryer rolls were made," explained Mr. Roof, "there were no specific standards and formulae for their design. Then, pressure and temperature were not a problem as mills used exhaust steam from engines and pressure seldom exceeded 25 lbs. of saturated steam. Fifteen lbs. was more general and 30 lbs. about maximum.

"Manufacturers had their own ideas on head design and many varied these for attractive appearance and to make room for name imprint, without thought of strength. Some of these head designs have since shown weaknesses. Reverse curves and flat portions on heads have given much trouble. Sections around manhole and handhole openings are generally weak spots.

"Later, with increase in demand for paper, pressure was brought on paper

THIS CAN HAPPEN TO YOU if dryer rolls older than 30-yrs. are operating at pressures above 50 psi. How to avoid dryer roll explosions is detailed in this article.

BERGEN J. ROOF talked on dryer rolls to Penjerdel Supts.

manufacturers to step up production by speeding up machines. Drives were often changed to electric or steam turbine and higher exhaust pressures or more live steam used to get higher temperatures needed for faster drying.

"The continuous demand for increases in pressures with corresponding increases in head failures as well as several disastrous explosions called for some method of limiting the pressure on old dryer rolls."

DESCRIBES MEASURING INSTRUMENTS . . . Mr. Roof then detailed two instruments used by boiler and machinery insurance companies to measure shell thickness. Shell thicknesses of old rolls are generally taken at 3 points across the face of rolls and at 4 points, 90° apart, around the roll; 12 in all. This will give unevenness of casting and warn of any internal corrosion or excessive external machining, he explained.

One method is the "Audigage" by Branson Instruments, Inc., Stamford, Conn., which measures thickness by transmitting ultrasonic sound waves through iron and times the reflection of the signal returning from the opposite side. By knowing the characteristic of the material, thickness can be calculated from readings obtained, he said. A similar instrument by the same company, the "Vidigauge," works on the same principle but thickness can be read directly on a scale superimposed over the television tube that shows the reflected "pip" or wave shape.

The other method is with the "Scott Electroflux" which measures thickness by measuring current density in the material. This is done by putting a d.c. current through the material and getting a micro-volt pick-up at two other points of the voltage drop across these points and amplified to a measurable value. Readings are accurate within 3%. It is necessary to have the object at even room temperature as changing temperature will affect voltage pick-up.

OPERATING PRECAUTIONS . . . After top safe operating pressure has been determined, stressed Mr. Roof, it is necessary to observe several operating precautions:

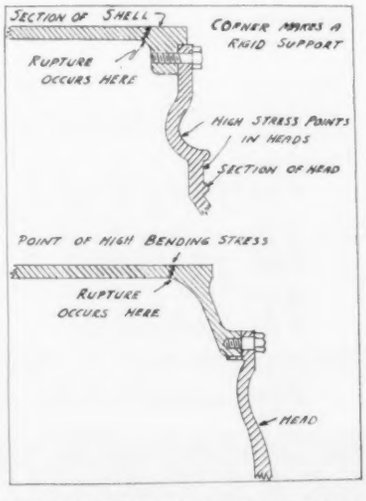
Where steam make-up is from a high pressure source, through reducing valves, it is essential that safety valves be installed on the low pressure side of the reducing valve, set at a pressure not greater than safe working pressure of the rolls and having a discharge capacity equal to that which high pressure steam line can supply to them.

Start your machine with a long warm-up period, he said, bringing the temperature up gradually.

Keep condensate out of rolls during operation. Extra weight of a roll half full of condensate and half full of steam at operating pressure creates two hazards. One is added beam stress and the other is sudden temperature differences from hot steam on top and cooler water underneath.

Diameter of Roll	Pressure Pounds	Required Thickness
36"	50	3/4"
36"	40	5/8"
36"	30	1/2"
48"	50	1"
48"	40	7/8"
48"	30	5/8"
60"	50	1 1/8"
60"	40	7/8"
60"	30	3/4"

MINIMUM ALLOWABLE THICKNESSES generally, for different sizes and operating pressures are given in this chart.



TYPICAL HEAD TO SHELL ATTACHMENTS of paper machine dryer rolls showing where dangerous stress and rupture points are.

surface defects. Grooves create points of high stress concentrations which aggravates premature cracking or failure.

"Careful checking and testing of all old paper machine dryer rolls is necessary to assign a maximum safe operating pressure," he said. "This should involve shell thickness tests as well as careful inspection of all parts."

We do not believe, said Mr. Roof, that any old paper machine dryer rolls should be operated above 50 psi and in many cases a lower pressure allowance would provide only a minimum margin of safety.

MALCOLM B. LOWE, Supt., Lowe Paper Co., Ridgefield, N.J., told Penjerdel meeting his mill concluded that best coating hookup for its purposes was a Champion coater midway in dryer section and an offset gravure coater near calenders.

Progress Report on Two Coaters

● Lowe Paper Co. at Ridgefield, N.J., recently installed tandem coaters on its 7-cylinder, 92-in. trim machine. A progress report on almost two years of using a Champion coater and an offset gravure coater was made by Malcolm B. Lowe, Lowe superintendent, to the Penjerdel Supts. Division meeting in Baltimore recently.

Lowe Paper Co., now in its 50th year, had no paper machine for its first 20 years. It did job coating of boxboard. In 1926 a board machine was installed and since then the company produced only off machine coated board, until two years ago. About 60% of its production is still off machine coated.

In 1953, a narrow 20-in. pilot coater was installed and several coating methods tried. A hot air tunnel was also put in. It was concluded that the best coating hookup, for their purposes, was a Champion coater in the dryers followed by a gravure offset coater in the calenders. This was installed in the summer of 1954.

In a few weeks, says Mr. Lowe, they were making machine coated board and have been running fairly smoothly since.

The Champion coater is midway among the forty-six 48-in. dryers and is followed by a smoothing press. The gravure offset coater is arranged to be bypassed in event of a break.

Advantages of the two coaters, explained Mr. Lowe, is that the company can make several different grades of machine board. About 1.5 lbs. of coating is applied at the Champion coater and about 2.5 lbs. at the offset coater. Different coating formulas are used on the two coaters; all casein on the Champion and a combination of protein and latex on the gravure. Latex tends toward low viscosity and casein toward higher, he explained.

Before installing the coaters, raw stock usually ran about 60 GE brightness. Since then, Lowe now bleaches de-inked stock to about 68 to 70 GE. Brightness picks up to around 72 GE with the Champion coater, and after both coaters to around 79 GE. With the gravure coater alone it runs to 76 GE.

Some questions superintendents asked Mr. Lowe and his answers:

Q. What is the pattern of the gravure roll. **A.** The roll is etched with a pyramidal pattern of about 55 to 70 dots to the inch.

Q. You spoke about bypassing the gravure coater when a break occurs. **A.** Yes, we bypass it and swing to another order and although it takes from 5 mins. to 20 mins. to repair a break, we will usually finish the order.

Q. Can you handle low solids and low contents lower than 50% on the offset? **A.** Below that we get tracking or a splitting pattern.

Q. What is size of your drying chamber? **A.** Three feet high (over the two 48-in. dryers.) It has 4 steam coils to recirculate air.

Q. Any trouble with grooving and wear with applicator roll. **A.** No.

Also brought out by Mr. Lowe was that the offset roll is stationary. On the dryer and printing rolls there is a dc motor so that speed ratio can be changed. Speed differential smoothens the coating. Practical operating range is 15 lbs. per M ft.

What Is An Ideal Counterflow Vat?

● After 21 years experience in cylinder machine operations what, in your opinion, would be the ideal type of counter-flow vat?

Lambert Wilder, production supt., Continental Paper Co. Ridgefield Park, N.J. described his idea of a good counter flow vat to the Penjerdel superintendents in Baltimore:

A double inlet hopper from the feed lines to the entrance of the vat, for better weight control on any machine over 100-in. wide.

Three-pass inlet in the vat.

Forty-eight inch cylinders.

Adjustable overflow dam with white water from inside the cylinder coming from vat ends to a single hopper going back to a variable speed pump.

Air extraction located on both ends

NEW WIRE GUIDE. ANDREW J. LUETTGEN, Mill Manager, P. H. Glatfelter Co., watches SIDNEY G. BRISCOE, General Sales Mgr., Pusey & Jones Corp., demonstrate features of new wire guide. Chesapeake Corp. of Virginia, West Point, Va., pioneered first mill installation for P&J and ordered additional units. Fraser Paper, Ltd. has ordered 5 and Mead Corp. has one at its Harriman, Tenn., mill. Unit is non-hunting—a feature which amazes mill men—and can be set from either tending or front side. Normal operation is at 60 psi but unit can work on 5 psi and 10 psi. It is accurate, says Mr. Briscoe, to .0002-in. Unit consists of Motion Transmitter, Central Station and Pneumatic Guide.

of the vat on the forming side of the cylinder.

VATS USED AT HIS MILL . . . Mr. Wilder also told the superintendents about the type of vats used at his mill. Here in substance are highlights of his talk:

Continental has two 8-cylinder Beloit board machines. No. 1 trims 122-in. and has eight 48-in. cylinders; 6 being counterflow with overflow dams; two liner vats being uniflows with non-stringing Beloit rectifier rolls in the inlet side. It has a new wet end put into operation in 1955.

No. 2 trims 132-in. and has eight 54-in. cylinders; six being counterflows and two liner vats being uniflow with overflow dam also using a Beloit non-stringing rectifier roll in the inlet. This wet end was put in during 1950.

Both machines make high grade board from machine coating to bleached manilas. Also, chip, news and mounting chip is made on the 132-in. machine. This machine is capable of going from 16 pt. clay coated to 75 pt. mounting chip at speeds over 3 times the regular basis weight.

No. 1 counter-flow vats are of cast iron head and wood construction with stainless steel vat circles making boards and overflow dams for ease of cleaning and maintenance. Three-pass inlets are being used with single hopper from the feed line to the vat bottom.

There are three Beloit butterfly valves in the first pass of the vat inlet. On the main overflow an adjustable dam controls the head into the vat. This overflow is directed to the end of the vat where it is mixed with white water from the inside of the cylinder, then directed through a return pipe into a variable speed pump and into a stand pipe on mix box.

White water is pumped to the screens by a constant speed screen

LAMBERT WILDER, Production Supt., Continental Paper Co., Ridgefield Park, N.J., said "Ideal paper machine is one that doesn't make 'hat.'"

pump. Remaining overflow water goes out through adjustable dams on the vat ends to the sewer. Uniflow vats are constructed the same way, without the 3-pass inlets; instead, a single inlet is used with a non-stringing rectifier roll, set high enough so that all stock passes through it.

No. 2 counterflow vats are of stainless steel construction, continued Mr. Wilder, and single inlets are used. There is a double hopper coming from the feed line to the bottom of the vat, with a butterfly valve in the inlet. Main overflow dam is adjustable.

This overflow of stock is drawn off by using a hopper, mixing with white water from the inside of the cylinders, coming around the ends of the vats. This flow then returns to a variable speed pump, then to the mix box. A constant speed screen pump is used to pump white water to the screen Uniflows are constructed in the same manner as the counterflows except that there is a Beloit rectifier roll in the inlet.

Other points of interest, cited Mr. Wilder, are:

A much freer furnish must be used in No. 1 type of counterflow vat as the sheet has a decided tendency to close up tighter than the single inlet type of counterflow vat. The inlet side pond of the No. 1 type can be run much lower, in some cases as much as 4 or 5 in., before the cylinder goes off. There is also much less tendency for the stock to roll or crush on the cylinders, where there is an overload. However, more care must be exercised in handling of No. 2 vats as to the height of the pond on the inlet side.

THREE MAURY's. During Penjerdel Supts. meeting in Baltimore, these three fellows got together and compared notes on similarity of names. Each has 3 children; none named a son after himself. (L to r) MAURY CASTAGNE, Eastern Editor, PULP & PAPER; MAURY STRELITZ, Chief Engineer, Continental Paper Co.; MAURY BONDURANT, New Chemical Products Engineer for Southeastern states for Socony Mobil.

Huyck's Ala. Felt Mill Ready

The new $3,500,000 felt manufacturing plant built by F. C. Huyck & Sons at Aliceville, Ala., will be ready for occupancy early in June, according to company president Granville R. Holden.

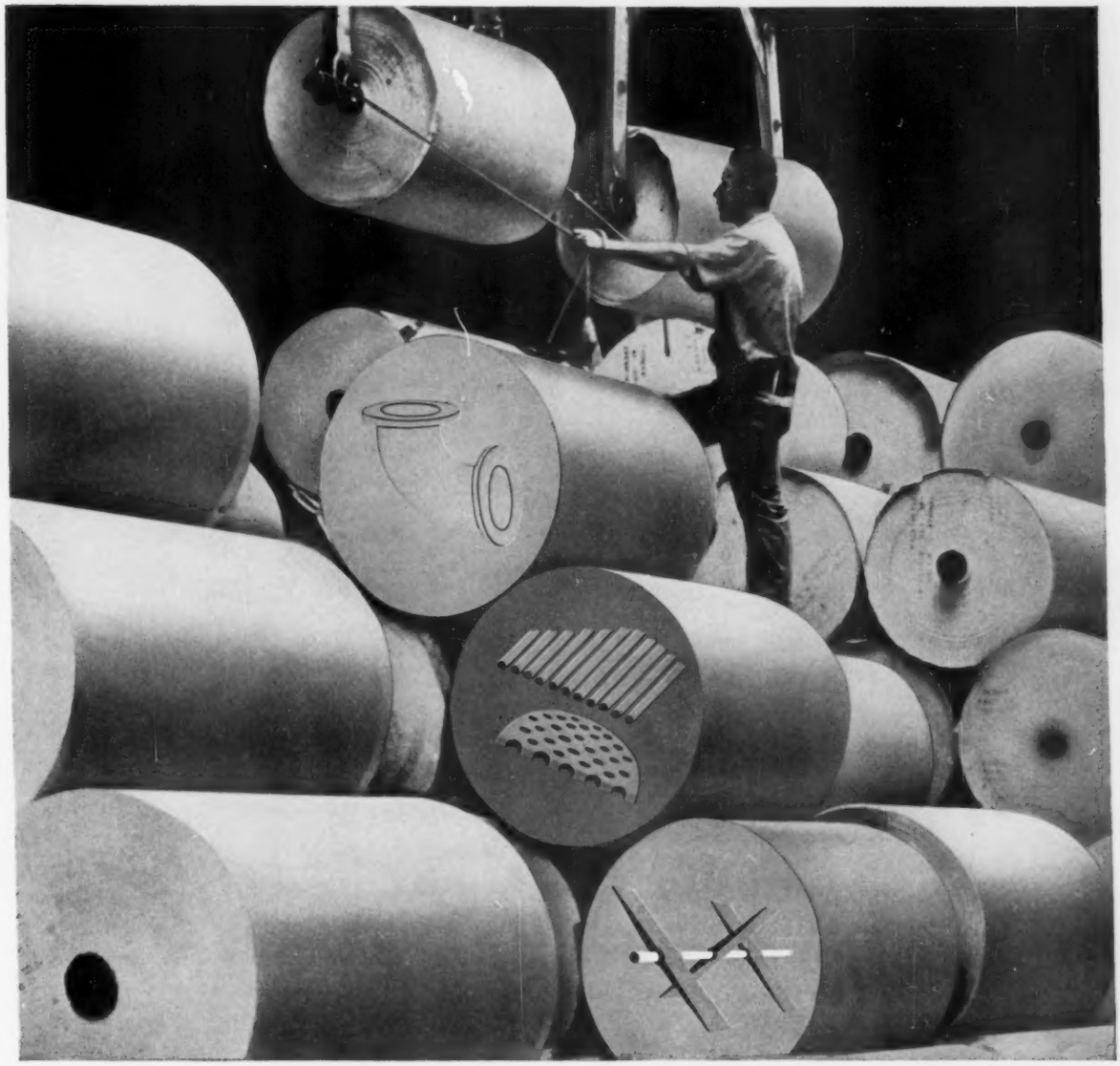
The plant will contain another three quarters of a million dollars in machinery and equipment. Construction for the modern new 200,000 sq. ft. plant began last November.

Construction of the Huyck mill followed a 10-year program of periodic surveys of Southern plant sites which would be ideally located realative to the growth pattern of the Southern paper industry.

Said Mr. Holden: "We have been watching closely the growth of the paper industry in the Southern states for the past several years. In 1929, for instance, 14 Southern states had 10.6% of the paper-producing capacity of this country. By 1954 these same states had 35% of total capacity. A very important part of our felt production now goes to paper mills in these states."

According to Mr. Holden, surveys concluded that the best central location for the plant was in Alabama. The plant is on the south bank of the Tombigbee River about seven miles south of Aliceville. The firm owns about 200 acres of land at the site.

"WE'RE FOND OF PAPER—PAPER IS WHAT BROUGHT US HERE." "Oversized horse-pilots," represented by Penjerded Paper Peddlers, entertain Superintendents and their guests at Wake-Em-Up Breakfast at Spring meeting in Baltimore.



how STAINLESS steel helps make better paper at lower cost...

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Many vital parts of paper making machines *depend* upon the durability and freedom from corrosion that stainless steel delivers. For example, valves and fittings, stock lines, screens, regulator mechanisms, save-all trays, flow and head boxes are all profitably made of stainless steel.

And while long-range economy *suggests* stainless in any mill, the strict quality requirement of some types of paper making *demands* stainless equipment. For stainless eliminates the problem of contamination and discolored paper due to iron pickup.

Crucible will be glad to help you cut costs with stainless. For practical information on ways of doing it, write for your free copy of the 20-page booklet "Making the Most of Stainless Steels in the Pulp and Paper Industry." *Crucible Steel Company of America, Henry W. Oliver Building, Pittsburgh 22, Pa.*

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CHEMPAC is a new Johns-Manville Packing which combines the sealing action and heat-resistance of asbestos with the all-around chemical resistance of Teflon*. Because of its versatility Chempac greatly reduces the number of packing styles needed for mill equipment. Moreover, stocking and inventory present no problem because the inert ingredients of Chempac do not deteriorate.

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Chempac Packing is available in coil, spiral and ring form for rod, plunger and valve stem applications. Johns-Manville also manufactures Chempac Gaskets, made of plies of asbestos cloth treated with Teflon.

Your Johns-Manville Packing Distributor can help you select the right Chempac Packing or Gasket for your application. For complete information, write him or Johns-Manville for PK80A, Box 60, New York 16, N. Y. In Canada, 199 Bay Street, Toronto 1, Ontario.

*Trade mark for DuPont Tetrafluoroethylene resin

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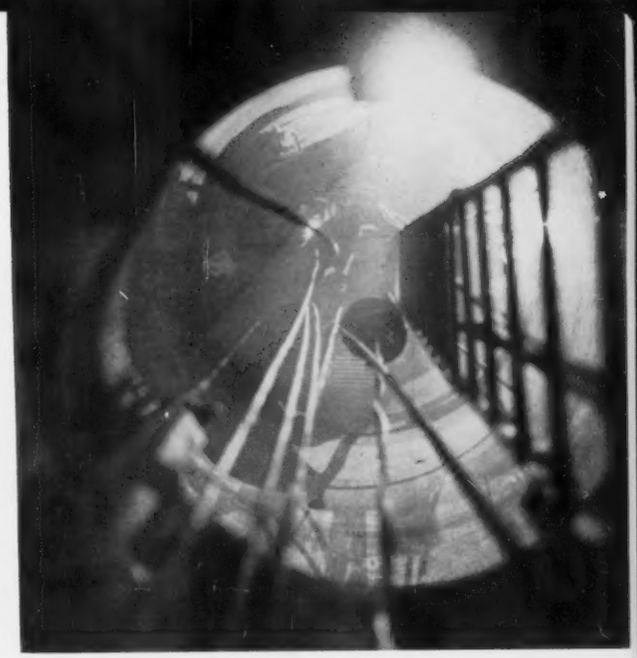


WELDER AT WORK. New stainless steel overlay is automatically welded to interior of digester at Weyerhaeuser Pulp mill, Longview, Wash. Photo shows process viewed through neck of digester from operating floor.

How Weyerhaeuser Renews Digesters

Automatic welding technique succeeds at Longview. Large major interior portion overlayed for first time.

● How to most effectively renew worn kraft digesters? This problem confronted Weyerhaeuser Timber Co., Pulp Division, last year at Longview, Wash. This is the first story revealing what happened.

The company's experience indicates it is practical to apply stainless steel overlay to digester walls by automatic welding.

Management was specifically concerned about 5 mild steel digesters, the Pulp Division's oldest kraft cooking units which were installed during 1947-48. Originally fabricated of welded plate segments 1⅝-in. thick, they had, through use, lost better than ⅝-in. thickness in some areas of the cylindrical portion as result of erosion and/or corrosion.

To ascertain the suitability of type 310 stainless steel overlay on walls of these digesters, trial applications were made by multiple passes with coated welding electrodes used in conjunction with conventional direct current shop welders. The original applications indicated (1) that manual application was both difficult and expensive, (2) that the applied stainless steel overlay stands up under operating conditions.

The application of stainless steel overlay to localized areas in digester walls had been previously successful (see article in April '55 PULP & PAPER by Edward W. Hopper, who has had wide experience as a consulting chemical engineer in combatting digester corrosion), and new units had been stainless lined by welding processes. But these 5 Weyerhauser kraft digesters, as pointed out by Plant Engr. Don G. Felthous, were the first in which a complete overlay was applied in place to the major portion of the interior area.

The company had previously relined the high-wear bottom 4-ft. section of the cones in these digesters. The first one with stainless 310 overlay by manual welding, the other 4 with Inconel clad plating.

ALTERNATIVE ESTIMATES:

Cost of materials for replacement of digester of ⅝-in. type 304 stainless steel cladding	**$56,800**
Installation cost	**20,000**
Total	**$76,000**
—— vs. ——	
Cost of stainless steel overlayment (in place)	**$25,000**
Time required — 4 weeks.	

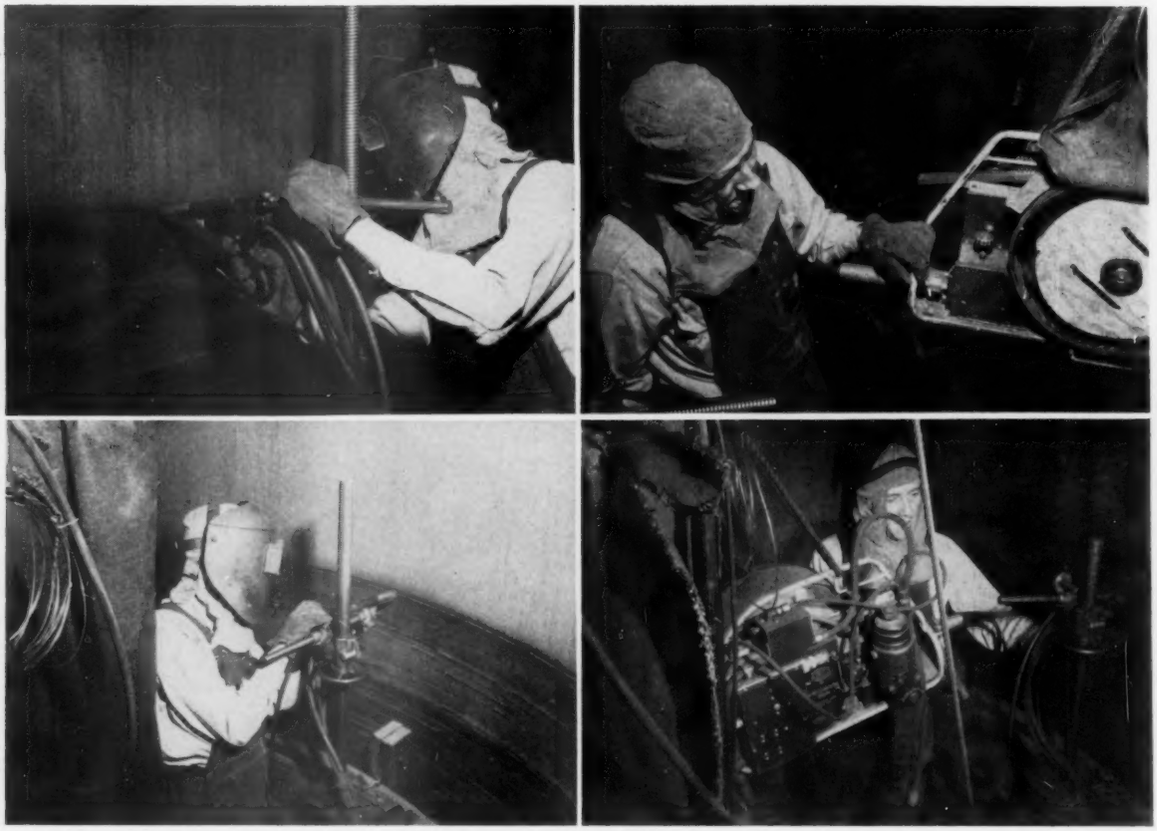
WHAT IT COST—Predicated on these and subsequent patch applications, the Weyerhaeuser organization undertook to adapt automatic welding processes to the job. As result of tests the company selected the Aircomatic model 21 welding gun and Airco's Bumblebee 500-amp. constant arc voltage dc welder.

The timber firm, with cooperative help of Air Reduction and Crucible Steel engineers, developed techniques for applying overlay to digester walls with the automatic guns.

This process has been used to apply stainless steel overlay to interiors of the cylindrical part of all 5 of the problem digesters. The costs for the 1330 sq. ft. of overlay per digester approximated $25,000 per unit. However, the first one, which included the expense of breaking in and completely training the crew, cost around $27,000. All inspection to date indicates complete corrosion stoppage.

In addition to the application of nearly 15 tons of Crucible Steel's type 310 stainless uncoated wire on this job, 50 lbs. of type 308 and 316 Crucible stainless were overlayed in one digester to ascertain their suitability. Indications are that these, too, will be acceptable.

The digesters, when new, were 11-ft. 2-in. inside diameter by 34-ft. high. They have a cone bottom, to which is welded a 10-in. diam. blow neck, and



IN-PLACE LINING DIGESTER WALLS with stainless steel wire in Weyerhaeuser kraft mill, Longview. Photo series, taken by P&P, shows Foreman AL TEMPLETON of Hoffman Construction Co. (contractor) simulating weld applications.

Top left, Pistol-grip Airco gun, mounted on indexing screw platform, moves horizontally on radiograph at selected speed while laying continuous bead on digester wall. Gun connections include in-and-out water hose, argon gas hose, casing carrying Crucible stainless wire.
Top right, Spool of Crucible Steel type 310 stainless wire in Aircomatic 21 gun.
Lower left, Traveling Airco unit applying horizontal bead through 120° digester segment.
Lower right, Aircomatic 21 consumable-electrode, automatic wire feed gun assembly.

a dome top with welded 30-in. diam. filling neck.

HOW WELDING WAS DONE—Lining of the first of the 5 digesters by overlay with stainless wire via automatic welders started in June 1955 and required 9 weeks for completing this first unit. The second one took 7 weeks and the last three about 4 weeks apiece, the entire job having been finished early this year.

Three sets of equipment, each independent of the other, were used simultaneously in each digester. The application technique developed and used here calls for each gun depositing a welding bead horizontally along one-third of the digester interior circumference. At the end of this allotted section the gun is indexed one bead higher (⅝-in.), by standardized advancing of elevation indexing control, and travel direction of radiograph is reversed. This 120° application scope was selected because it tended to keep the tangling of gear (hoses, wires, etc.) to a minimum.

The welding operation is carried on from a platform suspended from the digester neck by 3 wire ropes, each attached to a hand winch. By this arrangement the platform, decked with aluminum grating, can readily be moved upward through the digester as welding progresses from botton to top.

THE EQUIPMENT USES—Each of the model 21 Aircomatic guns includes the following: A case containing a holder for 25-lb. spool of stainless wire; a wire feeder and electrical controls; hoses for argon gas and cooling water; a control lead and control feed casing leading to the pistol-shaped control gun.

The wire feeds from the case-contained reel through a set of drive rolls through the casing to gun.

An Airco No. 10 radiograph—a small variable speed electric-driven tractor on which is mounted a device to vertically and horizontally index the control gun—carries the gun in operating position along the digester wall. The radiograph travels on an endless horizontal track which forms a complete circle inside the digester.

The Bumblebee welders and argon gas bottles remain on operating floor of the digester building. Hoses from the gas bottles, lead wires from the welders, water hose, electric line leads and an air hose for cleaning equipment enter the digester through digester neck to service the guns.

To provide access to the welding platform, a sectional steel ladder is attached to the digester neck. Asbestos curtains, painted black to minimize arc reflections, divide the digester interior and platform area into a central entry compartment (along the ladder) and 3 working areas—one for each operator and gun. Fans keep the digester interior supplied with fresh air and ventilation, thus holding down atmospheric temperature and dispersing welding fumes.

PREPARATION IS IMPORTANT—The interior wall of each digester was cleaned prior to start of welding. The

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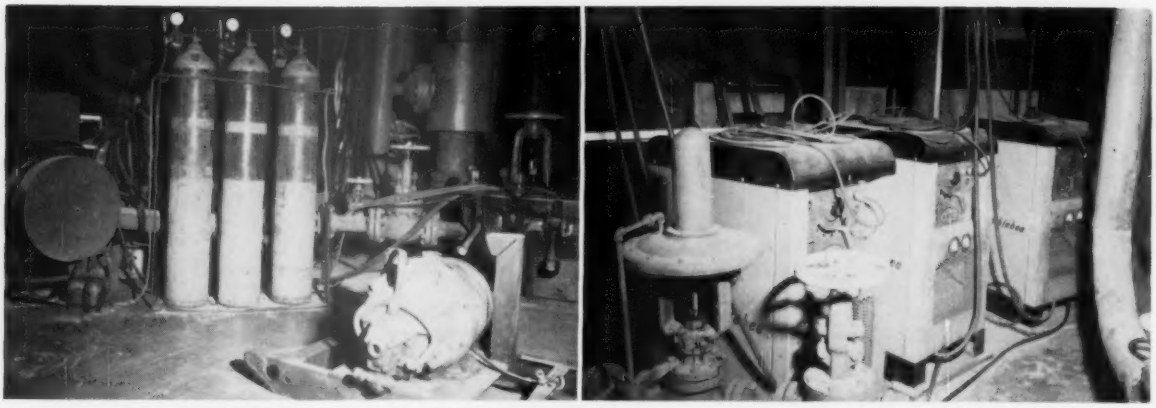

GEAR ON OPERATING FLOOR serve operations in digester. **Left view** (l to r), auxiliary hand welder, bottles containing Airco argon gas for shielding arcs, air winch (foreground) for lowering and raising equipment in digester at far right. **Right view**, Airco Bumblebee welders specially designed for Aircomatic process.

"pickling" or "descaling" process consisted of washing with solution of 10% hydrochloric and 5% nitric acids. Then rinsing with water, to remove contaminants, followed by 30% nitric acid wash and final water rinse. This preparatory processing, although not used initially, was adopted as a labor-saving economy.

Strainer plates and brackets, at intersection of cone bottom and digester walls, were temporarily removed from all the digesters but one to facilitate processing. Overlay was applied manually to the uppermost 2-ft. of the cones. Incidentally, the balance of the cone wall area (between the 2-ft. section under strainers and the stainless overlay or Inconel clad plates previously applied at bottom of cone) showed no appreciable wear. Upon completing this portion, the platform was assembled, the 3 guns mounted and positioned, and overlay applied mechanically to the entire wall area.

Domes of these digesters showed no appreciable wear and consequently were not involved in the lining project.

The project, under direction of Weyerhaeuser Longview Branch engineering department, headed by Mr. Felthous, was contracted to Hoffman Engineering Co., which carried on the work with two crews. The day shift consisted of a foreman and 4 welders; the night crew, 3 welders and an operating foreman. Responsibility for the operation was vested in the day foreman. He did no welding but kept both crews supplied with materials and was charged with getting welding equipment to and from the shop for maintenance and repairs.

FACTS ABOUT OVERLAYS

Data pertaining to overlaying interior digester walls with stainless steel:

Overlay thickness	⅛ in.
Overlay width per pass	3/16 in.
Wire per sq. ft. of overlay	4.5 lb. type 310 s.s.
Argon per sq. ft.	32 cu. ft./sq. ft.
Sq. ft. overlay per welding man hrs.	1.38 sq. ft./hr.
Sq. ft. overlay per total man hrs. (set up, cleaning, welding, foreman, etc.)	0.57 sq. ft./hr.

COST DATA

Labor per hr.	$4.05
Materials per sq. ft.	$11.30
Labor per sq. ft.	$7.10
Labor and materials per sq. ft.	$18.40
Welder repairs per digester	$500.00
Total cost of welding per digester 1330 sq. ft.	$25,000.00

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Because the facilities at our modern mill are devoted exclusively to the production of paper-maker's felts, we can concentrate our undivided attention on your particular requirements. Whether it is a need for a special chemical treatment or a question of blending with synthetics, you can be certain that your inquiry will be the signal for a 'round-the-table discussion that produces results.

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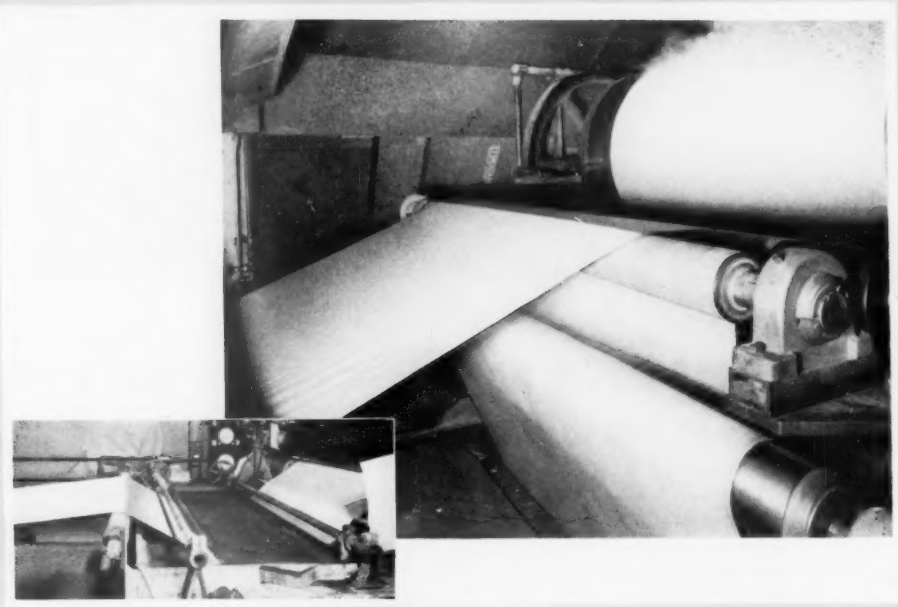
Mount Hope SYSTEM

"Mount Hope Expanders eliminate wrinkles – help give us continuous, top-quality production"–says Mr. W. E. Haley, *Vice President in Charge of Production*



System of Mount Hope "Free Wheeling" Expanders on Size Press at American Sisalkraft Corporation, Attleboro, Massachusetts Plant. These Expanders allow even saturation time through the size bath and keep the saturated sheet WRINKLE-FREE before going on to the dryers.

Mount Hope Expanders hold paper to full width and eliminate wrinkles on wet or dry installations. Use the complete Mount Hope System for maximum production at lowest cost with minimum waste.

A Mount Hope engineer will be glad to study your problem—or send for Bulletin EP.

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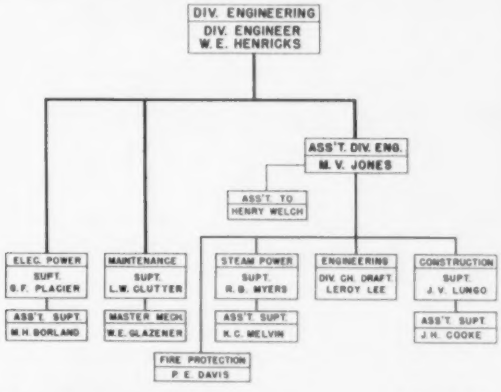
ORIGINATOR OF MODERN EXPANDERS LEADER IN CLOTH HANDLING EQUIPMENT

MOUNT HOPE MACHINERY COMPANY

163 Fifth St., Taunton, Mass.

THE Z SCREEN AND ITS INVENTOR, white-haired CARL ZIEGENBUSCH, Mead's Chillicothe Division Engineer Advisor, is third from left. He invented Z Screen, shown here. Size of openings in screens making up 6 cylinders is about 8/1000 in. "Walter Recobs, Charles Crow, and Color Plant Operators such as Earl Mace, offered many suggestions in perfecting the screen," says Mr. Ziegenbusch.



DIV. ENGINEER W. E. HENRICKS
And how Chillicothe Division Engineering is organized.

New Engineering Moves At Chillicothe Mill

Warren Henricks, who joined The Mead Corp. as a junior engineer in 1947 from the University of Illinois, is new division engineer for the parent mill at Chillicothe, O.

He succeeds Carl Ziegenbusch, inventor of the Z Screen for thinning coating material by vibration, which was patented in the U.S.A. just last January and has patent pending in Canada.

Mr. Ziegenbusch will serve in an advisory capacity in engineering the rebuild of Chillicothe's No. 10 machine and a new stock metering system for No. 3 Paper Mill. He retires Mar. 1, 1957.

A native of Dayton, O., and graduate of the U. of Pennsylvania, he joined Mead in 1927. Four of his Z Screens are now used at Chillicothe, supplanting older ink mills used to break up heavy coating solids. One Z Screen does the work of 3 to 5 ink mills, and more cheaply, processing a ton at 9 to 12 cents instead of 25 cents. Only 2 hp is required, compared to 20 hp for an ink mill. Space saving, lower maintenance, easier cleaning are other advantages.

Scapa Felt Expert Comes From England for Meeting

Morey Paper Mill Supply Co., selling agents for Scapa Dryer Felts, has secured Dr. Edward Race, research head and director of Scapa Dryers, Ltd., Blackburn, Lancs., England, to give a talk on dryer felts June 14 at the Lake Placid, N. Y., National Convention of the American Pulp & Paper Mill Superintendents. Dr. Race is making the trip from England especially to fill this assignment. A question-and-answer period will follow the session.

Mosinee Mills Develop New Mail Sack

Mosinee Paper Mills Co., Mosinee, Wis., is the mill which deserves credit for development for U. S. Post Office Dept. of the new and rugged one-trip paper mail sack recently reported in newspapers.

At present these sacks are used only in parcel post shipments to certain U. S. overseas possessions. The sacks are expected eventually to be put in use on many other overseas parcel post shipments by the Post Office Dept.

Experiments in Alaska reveal that annual savings of $100,000 in transportation costs alone could be effected through the use of the new paper sack in this territory.

Cooperating in these experiments were Bemis Bro. Bag Co.; Owens-Corning Fiberglas Corp. (which supplied the Fiberglas yarns); and American Cyanamid Co. which supplied melamine resins for wet-strength.

Claims World Record

Elk Falls Co., subsidiary of Crown Zellerbach Canada at Duncan Bay, B.C., claims to have set a world's record May 7 for newsprint production on a single machine when 322.3 tons were turned out on its Dominion Engineering Co. unit. Jack Youden is paper machine superintendent; Thomas Hargreaves, resident manager.

New Pres. for Stowe-Woodward

DAVID W. STAPLETON (right) has been elected Pres. of Stowe-Woodward, Inc., succeeding E. W. PETERSON (left), who becomes Chairman of the board. Mr. Stapleton has been Exec. Vice Pres. since 1954; his assumption of the presidency will provide Mr. Peterson with more time to devote to policies attendant upon the rapid growth of the company. Stowe-Woodward, with plants at Newton, Mass., Neenah, Wis., and Griffin, Ga., makes custom rubber covered rolls and mechanical rubber products for paper and other industries.

TAKE OVER "TOP SIDE." New officers of Western Branch, Technical Section CPPA: HOWARD GRAHAM, Tech. Dir., Elk Falls Co. (center) new Chairman, shakes hands with his predecessor, LOU PUMPHREY, Westminster Paper Co. Others in group (l to r): DR. JOHN KEAYS, Powell River Co., Second Vice Chairman; DR. M. WAYMAN, Columbia Cellulose Co., First Vice Chairman, and DON LIVINGSTON, Esco Ltd., Secretary.

HOW SYNTHETICS ARE USED IN FELTS—The panel who discussed the role of synthetics (left to right): A. C. CARLYLE, Dupont, Wilmington, Del.; H. J. BELL, Tech. Mgr., Asten-Hill Co., Valleyfield, Que.; LARRY M. WOODSIDE, Tech. Mgr., Albany Felt Co., Albany, N.Y.; SAM MILNES, Tech. Dir., Ayers, Ltd., Lachute, Que.; R. FAIRS, Mill Supt., Porritts & Spencer, Hamilton, Ont. (DR. RALPH H. BEAUMONT, Jr., Asst. Dir. Chem. Research, F. C. Huyck & Sons, Rensselaer, N.Y., also participated in panel, for which ALEX VAN ALLEN, Powell River Co., was moderator.)

Era of Natural Gas Use Seen in Far West

● An era when many mills in the Pacific Northwest will be depending largely on natural gas for power, heating and other purposes is in the horoscope for that great pulp-paper area.

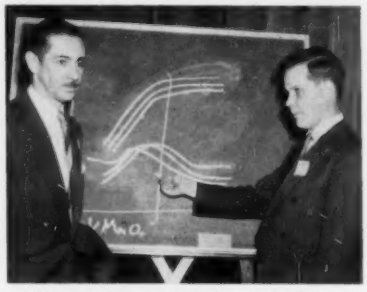
Technical Section, Western Branch, Canadian Pulp and Paper Association, heard P. W. Burchard, executive of British Columbia Electric Co., talk of this prospect at its meeting at Harrison Hot Springs late in April.

Mr. Burchard envisaged potentials of Westcoast Transmission Co's 930-mile natural gas pipeline now being built from British Columbia's Peace River field to the cities of the Northwest. It will ultimately supply power comparable to that of some of the largest hydro-electric plants in the area.

Mr. Burchard told of several interesting gas burner applications that already had been made in the press sections of paper machines, notably by Fibreboard Products at Antioch, Calif. These burners increased the temperature of the sheet entering the third press from about 89 to 128° F, the gas usage being approximately 7 cu. ft. per hour per inch of burner. They increased the drying capacity of the machine about 5 tons per 24 hours.

In connection with coating work the direct application of radiant gas burners offered the advantage of rapid heat transfer without mechanical contact. Some of the larger paper companies had found that high speed coating could be handled very efficiently by utilization of radiant burners in the initial stages of drying and for the final phases of the drying as well. He denied that direct use of gas burners was hazardous, especially when proper safeguards were used.

"In general, we find that something around 2500 btu are required for each pound of water removed from the paper," said Mr. Burchard. "It is general practice to utilize the burners at the wet end where the greatest benefits are derived, and at that point it is possible to transfer heat to the sheet very rapidly. Gas equipment offers a convenient and efficient means of drying and it is easily controlled by automatic devices. In crowded plants where boilers are being used to capacity real savings can be obtained. In new plants initial investment can be greatly reduced, space can be saved and high drying speeds obtained."



WINNER OF POWELL RIVER CO. AWARD—ROLF SERENIUS (right) the first Powell River man so honored during eight years since the award was offered for the best technical paper by a junior staff member of the Coast section. DR. RALPH PATTERSON, (left), Director of Planning and New Developing for the company, made the presentation.

THEY "WOKE 'EM UP"—Migratory Peddlers' Barber Shop Chorus. Kneeling—SAM McKAY, Western Gear. Back row, DON LIVINGSTON, Esco Ltd.; DOUG STINSON, Van-Waters & Rogers. Second row, FRANK BACON, Penman's Ltd., TORE AHLEN, Lundberg-Ahlen Ltd. Standing at right: JIM BRYANT, Ross Engineering; WILSON DREXEL and GERRY WHEELER, F. Drexel & Co.

HUMAN RELATIONS . . . Luncheon speaker R. H. R. Young, executive v.p., Crown Zellerbach Canada, and chairman of the Western branch CPPA, reviewed expansion of the industry and the responsibility which it imposed on management.

"We know some of the most important qualities are on the 'know-how' level," said Mr. Young, "but there are other abilities of even more importance. For instance, that priceless personality trait—the ability to get along with people. Executives and supervisors developed through academic training are often pedants. This does not make for good public relations. What is needed more than anything else in management is 'the broad view'—recognition of the importance and value of sincere, objective human re-

How these Crane Valves cured "dead" stock on low velocity flow

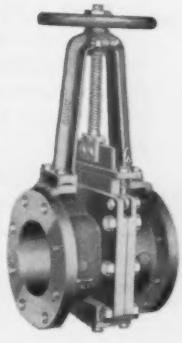
THE CASE HISTORY—During the past eight years, a large Southern paper mill has been using two makes of pulp stock valves. One is Crane—like the No. 1427 12-inch valve you see above, on lines to pumps handling high density stock between first and second stage bleaching.

Today, this mill is changing over to Crane valves exclusively as rapidly as possible—for two reasons. They were having trouble with "dead" stock built-up in low velocity flow lines and also with leakage caused by washing out of small accumulations of stock under valve discs.

Neither of these problems has occurred with Crane valves. With the Crane clog-proof shearing action against deep notches in the body, fibers *can't* accumulate under the disc. And Crane's unrestricted flow design, through full-port area, prevents pulp build-up or "dead" stock in lines.

Add Crane's quality materials and superior manufacturing methods—backed by over a century of skill—and you have basic reasons why case histories like this on Crane pulp stock valves are not uncommon at all.

You can order Crane iron body pulp stock valves in sizes up to 24 inches, including rubber lined, with a variety of trims. And be sure to inquire about all-new, lightweight Crane stainless steel stock valves with short face-to-face dimension, for maximum resistance to corrosion.



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● If you have *any* corrosion at your plant, stop it *now* before replacement costs eat gaping holes in your profits! Send coupon above—take advantage of Truscon experience and know-how.

Chemfast is a heavy-duty coating for protecting indoor and outdoor surfaces of wood, metal and masonry against moisture, acids and alkalis. It owes its toughness to Devran (epoxy resin).

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Division of Devoe & Raynolds Co., Inc.,

lations. It is the gracious ability to be sincerely interested in the other fellow's point of view and the business of developing a real and positive sense of humor."

MACHINE FELTS AND SYNTHETICS . . . The role of synthetics in felts was ably discussed by a panel with Alex Van Allen, Powell River Co. as moderator, comprising Dr. Ralph Beaumont, F. C. Huyck & Sons; H. J. Bell, Asten-Hill; R. Fairs, Porritts & Spencer; Sam Milnes, Ayers, Ltd.; Frank Bacon, L. M. Woodside, Albany Felt Co.; and A. C. Carlyle, Dupont.

Selection of employes was dealt with by Dr. Ed Friesen of Stephenson & Kellogg, and H. G. Meister of Hyster Corp., Portland, told about the use of liquefied petroleum gas in pulpwood loading and lift trucks.

Howard Graham, technical supervisor of Elk Falls Co., Duncan Bay, was elected chairman, succeeding L. W. Pumphrey, Westminster Paper Co. Dr. Maurice Wayman, Columbia Cellulose Co. was named first vice chairman and Dr. John Keays, Powell River Co., second vice chairman, with D. A. Livingston continuing as secretary-treasurer.

Entertainment for the Wake-'em-up Breakfast was provided by Waiting Room No. 6, International Brotherhood of Migratory Peddlers, headed by Bob Alpen.

New Name For Pabco Fibreboard Combine

Pabco Products Inc. has changed its name to Fibreboard Paper Products Corp. Thus Pabco adopts a corporate name closely associated with that of its wholly owned subsidiary, Fibreboard Products Inc. Pabco accounts for about 25% of total annual sales of more than $128 million by Pabco and Fibreboard Products Inc. together.

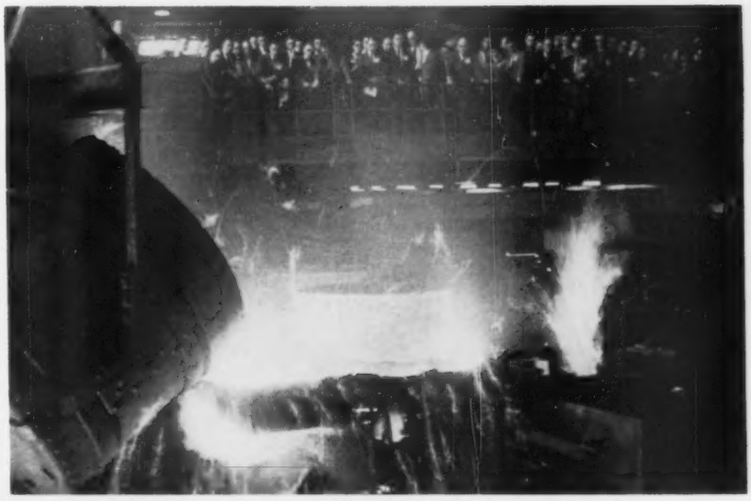
Hovey and Chisholm Elected

REX W. HOVEY (left), former Exec. Vice Pres., has been elected Vice Chairman of the board and WILLIAM H. CHISHOLM (right), former Vice Pres., has been elected Pres. of Oxford Paper Co. Mr. Hovey was also elected to the board of Rumford Falls Power Co., an Oxford subsidiary.

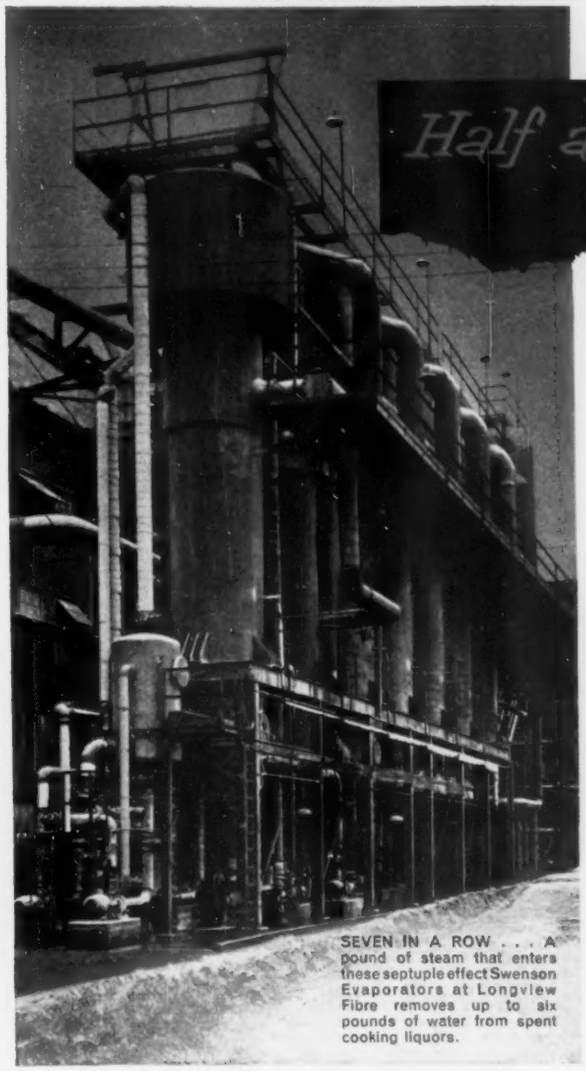
Beloit Is Working On New Roll Arrangement

About 250 members of Lake States TAPPI and other guests from Wisconsin and nearby mills made a tour of the expanded Beloit Iron Works in connection with a sectional meeting held recently at Beloit, Wis.

Harry Moore, president of Beloit Iron Works, welcomed the group. Donald Simonds, sales manager, described the suction pickup development and other new machine features being used on Beloit machines. He revealed that Beloit engineers are working now on new and improved arrangements for rolls in the suction pickup and transfer. The dinner session was at the Beloit Country Club.



THRILLING SCENE FOR PAPERMAKERS. In the big shops of Beloit Iron Works, Beloit, Wis., over 40 members and guests of Lake States TAPPI stand on balcony, watching the casting of a big calender roll.



Half a Million Pounds

OF EVAPORATOR CAPACITY PER HOUR!

SEVEN IN A ROW . . . A pound of steam that enters these septuple effect Swenson Evaporators at Longview Fibre removes up to six pounds of water from spent cooking liquors.

Lower operating costs through increased evaporator steam economy! That is the story at Longview Fibre Company, Longview, Washington, since Swenson Evaporators were installed. The two septuple effect evaporators provide capacity to evaporate one-half million pounds of water per hour!

The Longview economy story is not new to Swenson. Ninety per cent of the septuple effect evaporators in use today were engineered by Swenson. Put Swenson's engineering know-how and experience to work in your plant. Call a Swenson engineer . . . now.

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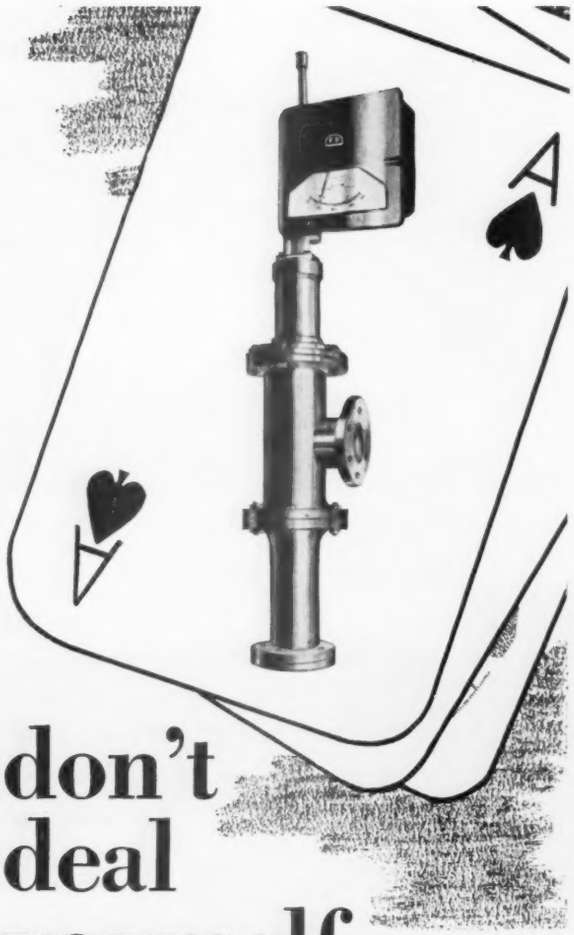

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Ham Feltz Hat Contest Is Still On!

The contest to decide what kind of a hat "Ham Feltz" should wear is still on!

Suggestions for headpieces for Ham should be sent to him—Ham Feltz, c/o Shuler & Benninghofen, Hamilton, O.

As our readers know, Ham is the happy character who has been appearing for 30 years in Shuler & Benninghofen ads, and of course he will wear the winning hats in the ads.

Among the early entries in the contest, one papermaker proposes a sort of baseball cap, with a green peak. The entire top of the cap is to be made of a net-like material, and the sides of canvas. The contestant called it "cool, real cool."

One genuine free Stetson hat will be given for every suggestion accepted by the artist, who is final judge. It is possible a contestant could win more than one Stetson!

Ross Engineering Promotions

Executive personnel promotions announced by President S. W. Fletcher for J. O. Ross Engineer Corp.:

C. J. SCHMIDT (top left), former Vice President—Sales, is now Executive Vice President. W. K. METCALFE (top right), for many years Secretary, was elected a Director and Vice President—Sales. J. M. PETIX (lower left), Sales Engineering staff, was elected Secretary. Mr. Schmidt has been with Ross 26 years. He is a graduate of the University of Wisconsin and for many years in charge of the Detroit office. Mr. Metcalfe joined Ross in 1936 after graduating from the University of Colorado. He has served recently in the dual capacity of Secretary and as an executive in sales and engineering. He holds U. S., Canadian and British patents. Mr. Petix has been with Ross 30 years, is a graduate of the City College (New York).

ROBERT R. McKELLAR (lower right) has been transferred from New York Office of J. O. Ross to Chicago Office. A graduate of New York University, he will be a Sales Engineer in Minnesota and Western Wisconsin.

How pH Affects Machine Felts

By WALTER D. WILLETTS*

● Control of pH is important to the papermaker because it affects such sheet characteristics as color uniformity, size and filler retention, and permanence. Also through corrosive action it affects mill equipment. The machine clothing manufacturer, realizing his product must meet different standards of different mills, is fully aware that pH control has a vital effect on felt performance and total felt life.

A brief explanation of the term "pH" will help in understanding the behavior of woolen felts subjected to various degrees of alkalinity or acidity. The term "pH" indicates to what degree—not amount—a solution is either acid or alkaline. Chart I illustrates this definite progression from strong acid, through pure water to a very strong alkaline solution. As pH values progress from 7 toward 0, each whole unit on the scale indicates a 10-fold increase in acidity. A solution of pH 2 is 10 times as acid as one of pH 3, 100 times as acid as one of pH 4 and 1000 times as acid as one of pH 5.

An example of the difference between degree and amount of acidity or alkalinity is found in the fact that a very dilute solution of sulfuric acid —say 0.05%—has a higher degree of acidity (pH 2.1) than a solution containing 100 times more acetic acid (pH 2.4).

The isoelectric point of wool—that point at which it absorbs neither acid nor alkali—is approximately 4.6 on the pH scale. That is, a pH of 7 is to water what 4.6 is to wool. For all practical paper mill purposes, wool remains unaffected by either acid or alkali through the pH range of 3.0 to 8.0.

It immediately becomes apparent that the resistance of wool to acid is

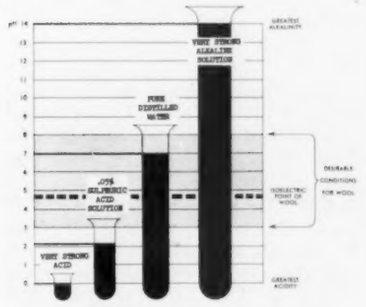


CHART I: The pH scale

*Service Engineer, Albany Felt Co.

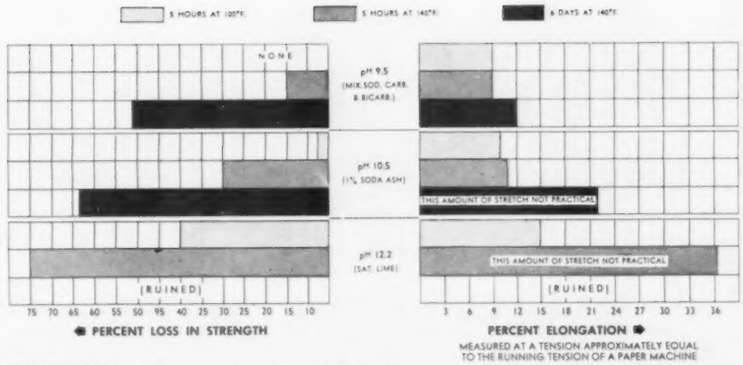
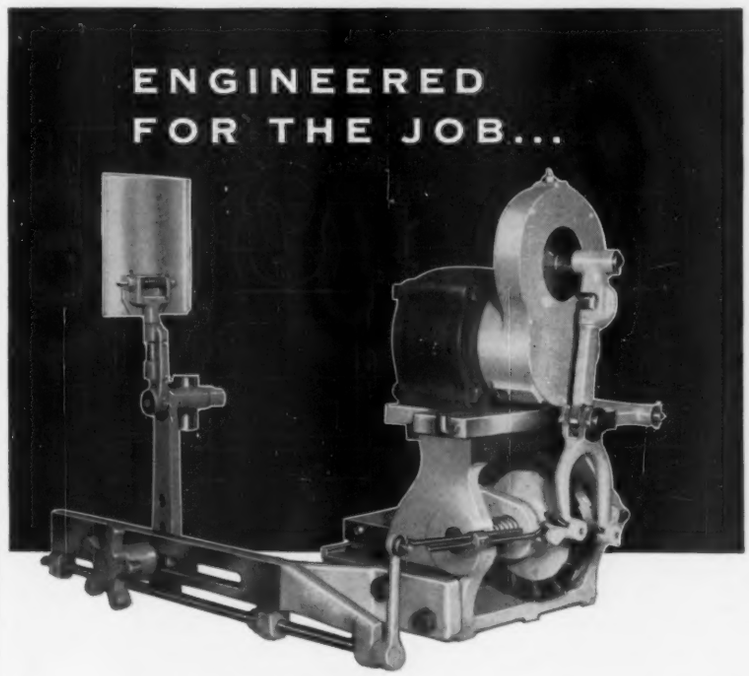

5 HOURS AT 100°F.
5 HOURS AT 140°F.
6 DAYS AT 140°F.
NONE
pH 9.5 (MIX. SOD. CARB. & BICARB.)
pH 10.5 (1% SODA ASH)
pH 12.2 (SAT. LIME)
THIS AMOUNT OF STRETCH NOT PRACTICAL
THIS AMOUNT OF STRETCH NOT PRACTICAL
(RUINED)
(RUINED)
75 70 65 60 55 50 95 40 25 30 25 20 15 10
PERCENT LOSS IN STRENGTH
3 6 9 12 15 18 21 24 27 30 33 36
PERCENT ELONGATION
MEASURED AT A TENSION APPROXIMATELY EQUAL TO THE RUNNING TENSION OF A PAPER MACHINE

CHART II: Specific examples of wool damage



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You get fast delivery—even on small quantities. No waiting for long runs of standard production items to be completed before your job can be started. Big orders can be handled efficiently and economically, too.

ESCO also offers you centrifugally-cast Spuncast® pipe, all types of flanges screwed fittings and flanged fittings cast specifically to meet your needs and analyses.

Complete engineering and metallurgical service is available when needed. Ask for details or write for free booklets "How to Cut Costs With *ESCO* Spuncast"..."*ESCO* Cast High Alloy Welding Fittings"."*ESCO* Stainless and High Alloy Products for the Process Industries."

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Salt Lake City, Utah
Honolulu, Hawaii
In Canada, Vancouver, British Columbia and Toronto, Ontario.

Walt Willets joined Albany Felt Co. in 1949, has been Service Engr. since 1950. He is a graduate of Syracuse U.

considerably greater than to alkalies. Its behavior is just the opposite of cotton and cellulose fibers which are easily attacked by acid solutions but are fairly stable under alkali action.

HOW WOOL RESPONDS TO DIFFERENT pHs . . . As mentioned above, the range from pH 3.0 to 8.0, which covers most papermaking conditions, is considered normal and needs no special emphasis. However, some stocks are outside this range and since degrading effects of alkali on wool are much more important than moderate acids, we will concern ourselves mainly with examples of alkalinity. See Charts II and III.

Actually in all of this study of pH on wool there are three factors interdependent on each other, namely, pH, time and temperature.

For example, a stock which has a pH of 8, or even 9, may be considered a normally good operating condition for a felt at a temperature of 70 to 90°F. but at 120 to 130°F. this stock would adversely affect the felt.

Also time is important—it might be satisfactory to use acid for cleaning a felt at pH 1.5 to 2.0; or an alkaline solution at a pH of 10 or slightly higher, for a short period, but if these solutions were continuously applied the effect on the felt would be considered severe.

In evaluating the effect of pH on a felt it is frequently as important to consider its stretching tendency as its ultimate breaking strength. For example, if a mill has a felt running satisfactorily with stock temperature at 90°F. and it is decided to raise the temperature to 120°F. for improved water removal the first thing noticed would be a tendency for the felt to stretch.

A similar stretching condition might occur if pH of the stock were raised from 8 to 9. Stretching creates problems, of course, one being the limitations of take-up rolls.

Referring to the portion of Chart II on application of soda ash and bicarbonate mixture (pH 9.5) to a felt, we note that there is no change in elongation for a 5 hour period at 100°F. but there is a tendency for the felt to elongate at 140°F. in the same period.

Also if this solution is applied for a 6 day period the elongation is radical. With the soda ash solution (pH 10.5) the differences are similar but more pronounced.

Chart III summarizes these conditions in terms of mill operating conditions. Because many mills have found it advantageous to combine a high alkalinity with high stock temperatures, it has been necessary for us to develop felt modifications which could withstand these adverse conditions. This would apply to some black areas in Chart III. Probably best among these is the use of varying percentages of synthetic fibers blended with the wool.

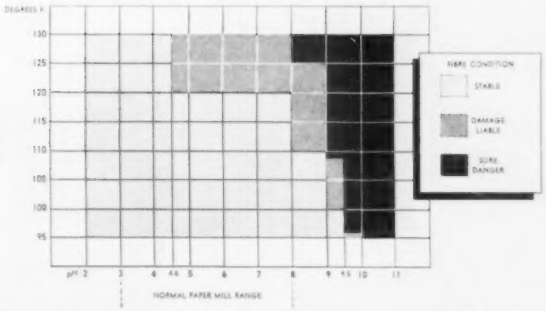


CHART III: High pH + high temperature = wool damage

Synthetics are able to withstand the attack of alkali to a much higher degree than all-wool felts. At the same time, we have developed several chemical treatments which provide greater resistance for the woolen fibers against the attack of highly alkaline pH conditions.

Problems created by high pH coupled with high temperatures are so important to both felt user and manufacturer that they merit full discussion and cooperation between both.

Felt Mill Starts Up in South Carolina

The new $2,000,000 Southern paper machine felt mill built by Albany Felt Co., in St. Stephens, S.C., is now in partial operation, according to Lewis R. Parker, president. Start-up of yarn-making machines took place only four months after start of construction Dec. 1.

The plant increases Albany's capacity for production of paper machine felts approximately 20%.

Open house for paper mill superintendents is planned to coincide with the annual meeting of the Southern and Southeastern Division Supts. Assn. in Charleston, S.C., Oct. 17-19.

Reprints of Valdosta Ponds Article Are Available

A number of requests have been received for reprints of the article, "How National's Nature Ponds Work," the story of National Container Corp.'s kraft mill effluent treatment and disposal system at Valdosta, Ga., which appeared exclusively in the Apr. 1956 issue of PULP & PAPER.

Readers may obtain free reprints by writing to PULP & PAPER, 1791 Howard St., Chicago 26, Ill., or to William T. Webster, vice president, National Container Corp., P. O. Box 1620, Jacksonville 1, Fla.

St. Regis Agents in Britain

Bulkley, Dunton Pulp Co., Ltd. has been appointed sales agents for Tacoma and other St. Regis Paper Co. pulps for the United Kingdom market.

PEOPLE IN THE NEWS

Stage "Debate" on TRR

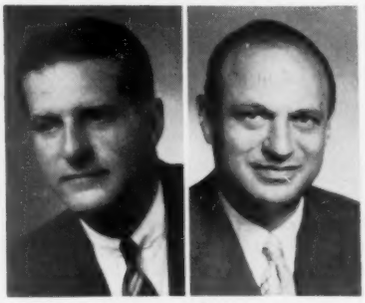
LEN PARKINSON (left), Paper Mill Supt., Rhinelander Paper Div. of St. Regis Paper Co., prepared the program for the Northwestern Supts. meeting in Rhinelander, Wis., in late May and FRANK FIXMER (right), Woodlands Mgr., Mosinee Paper Mills, was Moderator for a panel discussion—"A Critique of the U.S. Forest Service Timber Resource Review as it affects the Lake States." At a Paper Week debate on TRR, Mr. Fixner said "Lake States foresters predict their pulp mills will become independent of wood sources outside the region by increased growth and use of hardwoods."

Changes at Columbia River

HANS BRUNE (left), graduate of Royal Institute of Technology in Stockholm and until recently Supt. of Swedish Cellulose Co. dissolving pulp mill in Sundsvall, joins Columbia River Paper Mills, Vancouver, Wash., as Tech. Dir. ALLAN G. STRANG (middle), head of Columbia River's Tech. Dept., transfers to the affiliated Oregon Pulp & Paper Co., Salem, Ore., as Asst. Pulp Mill Supt. RODERICK A. PERKINS (right), formerly of Bergstrom Paper Co., Tech. Dept., becomes Tech. Dir. at Oregon Pulp & Paper.

Promoted by National Gypsum

FRED L. BUCHANAN, (left), has been named manager of the new National Gypsum Co. paper mill at Anniston, Ala. He was manager of the Pryor, Okla., mill and joined the firm in 1950. Succeeding him as manager of the Pryor mill is ARTHUR H. COSTAIN, (right), who joined National Gypsum in 1953 as manager of its Newburgh, N. Y., plant.



New Gottesman Officers

IRA D. WALLACH (left), is new President of Gottesman & Co., Inc. and Central National Corp., succeeding the late D. Samuel Gottesman. Mr. Wallach has been an officer of both organizations since 1946 and Exec. Vice Pres. since 1952. He is 47, resides in Scarsdale, N.Y., has served as Exec. V. P. and Chief Exec. Officer of Eastern Corp., and as Pres. of Eastern's subsidiary, Royal Lace Paper Works. ARTHUR ROSS (right), former Vice Pres., has been elected to board of directors of Central National Corp., and to new post of Exec. Vice Pres. and Managing Director.

For G.E. in Lake States Posts

Heading up newly created User Industry Sales Groups for General Electric Co. in key Lake States centers are WILLIAM M. McGRAW (left), new Manager in Appleton, Wis., and DAVID B. GEARHART (right), heading the new set-up in Kalamazoo, Mich. In their cases, the paper industry is their major interest. G.E. has created new User Industry Sales Groups all over the country to better serve these markets with more decentralized set-ups, according to current G.E. philosophy of sales organization.

Mr. McGraw joined G.E. in 1927 after graduating from Georgia Tech in e. e. After completing the Apparatus Dept. test course in 1929 he was assigned to the Industrial Division in Schenectady. In 1930 he was transferred to Milwaukee Office as Sales Engineer, Industrial Div., recently moved to Appleton.

Mr. Gearhart, born in Hopkinton, Iowa, graduated from Iowa State in 1927 and immediately joined G.E. He was with International G.E. from 1928-1936 and was Sales Engineer in Detroit from 1936 to 1939. Since 1939 he has been assigned to Kalamazoo Valley territory, and recently opened now offices in Kalamazoo. Active with him in paper industry work is J. R. HANDLEY, Western Michigan Rep. of Detroit Apparatus Service Shop in Kalamazoo Office.

From Caddy to Chairman

STEVE BAISCH (left), who as a boy caddied on Shalagoco golf course at Shawano, Wis., went back there in May to be elected new Chairman of Lake States TAPPI Section. One of spearheads of this industry's cooperative research into costly digester corrosion causes, he is Design Engineer in charge of Engineering for Thilmany Pulp & Paper Co. Born in Ironwood, Mich., he graduated from U. of Wisconsin in 1942, served as Major in Army Ordnance in invasions of Sicily and North Africa, came back to join Thilmany in 1945.

ROBERT L. LEAF, JR. (right), Vice President in charge of Development, Shawano Paper Mills, Chairman of first TAPPI meeting ever held at Shawano, successfully demonstrated how small mills can put on meetings as well as big ones. He was proud of record turnout of 45 for trapshooting, as well as about 100 for golf. Born in St. Paul, he is Institute of P.C. graduate.

Other TAPPI officers elected: DON MacLAURIN, Tech. Director, Gilbert Paper Co., as Vice Chairman; WALTER BUBLITZ, Kimberly-Clark Research, as Secretary, and Mr. LEAF as Treasurer.

NEXT MONTH—Watch for PULP & PAPER's pictures of Lake State TAPPI members on Shawano links. Some 20 or so Lake Staters are in the "photo gallery."

Draper Staff is Increased

LEWIS H. BREYFOGLE (left), of Kalamazoo, Mich., who has been appointed Midwest Sales Supervisor for Draper Brothers Co., Canton, Mass., manufacturers of papermakers' felts, with top responsibility for Draper business in seven Midwestern states, reporting to RALPH BRIGGS, Sales Mgr., according to John H. Draper, Jr., President. Mr. Breyfogle will direct Draper sales in enlarged territory. HUBERT (MAC) MACDONALD (right) will assist Mr. Breyfogle, he will headquarter in Chicago and travel in Minn., Wis., Mich., Ill. and part of Indiana. For past 12 years he has represented a manufacturer of chipper knives and paper cutters to Lake States mills. Born in Iron River, Mich., he was raised in Chicago, educated at U. of Illinois, and was in letterpress printing business in Chicago with his father.

look

it's

TITANOX®

One reason for the public acceptance of cellulose facial tissues is their "clinical" whiteness. You can heighten the brightness, whiteness and opacity of such tissues by adding TITANOX-A-WD at the beater . . . yet softness of the fibers can be maintained.

For lightweight stocks, publication paper, glassine, TITANOX titanium dioxide is your No. 1 choice in white pigments. Titanium Pigment Corporation (subsidiary of National Lead Company), 111 Broadway, New York 6, N. Y.; Atlanta 5; Boston 6; Chicago 3; Cleveland 15; Houston 2; Los Angeles 22; Philadelphia 3; Pittsburgh 12; Portland 14, Ore.; San Francisco 7. In Canada: Canadian Titanium Pigments Limited, Montreal 2; Toronto 1.

3849-A

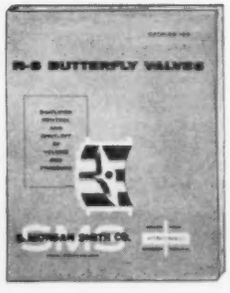
NOW YOU CAN SPECIFY STANDARD R-S BUTTERFLY VALVES FOR FASTER DELIVERY

R-S
BUTTERFLY VALVES

When the delivery date is important, you can get faster service on standard R-S Butterfly Valves. Based on the results of previous experience, R-S Valves are now standardized. All components for those most commonly used, in sizes from 4" to 48", are carried in stock, ready for assembly.

R-S Butterfly Valves give you positive, dependable performance. You get the advantages of:

- complete control in all positions of normal regulating range.
- fast regulation and closure.
- minimum pressure drop that saves power.
- compactness and light weight at less cost.



This new catalog will give you complete dimensions, specifications, layout drawings and materials for all R-S Butterfly Valves in the pressure ratings that have been standardized to date. As others are added, new sections will be published. To get a free copy and assure yourself of future sections, contact your SMS representative, or write to S. Morgan Smith Company, York, Pennsylvania.

HYDRAULIC TURBINES · GATES & HOISTS · TRASH RAKES · PUMPS · ACCESSORIES

HYDRODYNAMICS

ROTOVALVES · FREE-DISCHARGE VALVES · BALL VALVES · CONTROLLABLE-PITCH SHIP PROPELLERS · BUTTERFLY VALVES

SMS
S. MORGAN SMITH

AFFILIATE: S. MORGAN SMITH, CANADA, LIMITED • TORONTO

Chemicals Column

Pulp and paper—3rd biggest consumer of chemicals

"It is a cellulose clothesline on which many chemicals are hung"

HYDROGEN PEROXIDE – Producduction is booming. Up 60% in 3 years. Will hit 45.4 million lbs. this year. About 10% is used in pulp and paper bleaching alone. Solvay Process is on stream with a new plant at Syracuse, N.Y. Becco is stepping up its output in Buffalo and Vancouver, Wash. Shell Chemical starts up a new plant in Norco, La., this year and this one alone will make 30,000,000 lbs. Columbia-Southern plans one at Barberton, O. Big stimulus is that it powers turbines that pump fuel for rockets, some torpedoes use it. It may become a takeoff aid for helicopters. DuPont of Canada, Montreal, also is starting engineering design of a plant at Maitland, Ont., "to manufacture hydrogen peroxide by a process completely new in Canada."

CHLORINE-CAUSTIC SODA–Dow Chemical Co. plans a $20 million plant to make caustic soda, chlorine and several organic chemicals in the Baton Rouge-Plaquemine area of Louisiana. It has options on two locations on the west bank of the Mississippi. The new division will be headed by Dr. A. P. Beutel, in addition to his post as general manager of the Freeport, Tex., plant.

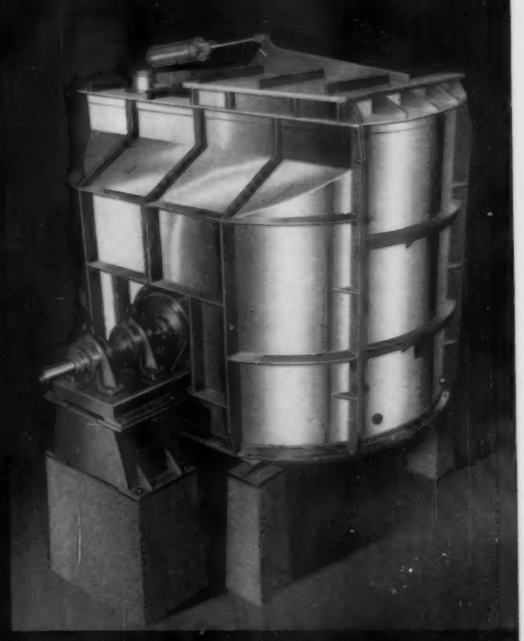
PIGMENTS–Whittaker, Clark & Daniels, Inc., New York City, are named sole distributor of Reckitt's "Seagull" Ultramarines (England) in the U.S. Reckitt's entry into the U.S. market of industrial type blues is a new venture. Its blue has been used for years here in laundry products. "Seagull" blues are available in a wide range of ultramarine shades from brilliant blues through the delicate violets.

POLYETHYLENE–A chemical plant near Wilmington, Los Angeles county, (Calif.), costing in excess of $10,000,000, for manufacture of a new low-pressure type polyethylene plastic is being built by Koppers Co., Inc., and Brea Chemicals, Inc., subsidiary of Union Oil of California. It will start up in mid-1957, producing a new rigid-type polyethylene which has higher tensile strength, greater heat resistance and other new properties. Koppers is already producing the material in semi-commercial quantities at its plant in Kobuta, Pa.

Maximum Pulping and Complete Defibering

in half the time . . .

Unique feature of the Hi-Lo Pulper: two separate rotors — large-vaned Lo-speed (right) for thorough break-up and circulation; small-vaned Hi-speed for complete defibering.



Ideal for installation under dry end of paper machine for direct or conveyor feed of broke for repulping.

Jones

HI-LO PULPER

The Jones HI-LO Pulper is engineered to eliminate the compromise imposed by conventional single-rotor pulpers, between maximum circulation and complete defibering.

Employing two separate rotors, separately powered, the HI-LO has proved its ability to produce maximum pulping *and* complete defibering — even on wet-strength and other difficult materials — without exorbitant use of power.

Moreover, users report no cutting or degrading, or loss of tear, and substantial savings in time. Ask your Jones representative for details or write us for Bulletin EDJ-1063.

E. D. JONES & SONS COMPANY
Pittsfield, Massachusetts
BUILDERS OF QUALITY STOCK PREPARATION MACHINERY

IN CANADA: The Alexander Fleck, Ltd., Ottawa

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New York 20, N. Y.

Foreign Licensees:
FRANCE Batignolles-Chatillon
SPAIN Gabilondo
ITALY de Bartolomeis
JAPAN Mitsubishi

This revolutionary advance in Jordan plug design

SAVES TIME AND MONEY FOR YOU

This new completely bandless Jordan plug is easier to strip, easier to fill. Inverted wedge type slots hold bars firmly in place, eliminate dangers of slot wear and corrosion. Slots and woods remain the same regardless of bar design — fillings can be readily changed without changing the plug.

Adapta-Plug is also available in Meehanite sleeve form for old plugs; removable, if desired, for easy changeover. Ask your Jones representative about this newest, strongest, most adaptable Jordan plug design today . . . or write us direct for complete details.

Photo shows how bars are grouped in pairs and wedged firmly in slots.

Jones **Adapta-Plug**

Jones

BUILDERS OF QUALITY STOCK PREPARATION MACHINERY

E. D. JONES & SONS COMPANY
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Foreign Licensees:

FRANCE	Batignolles-Chatillon
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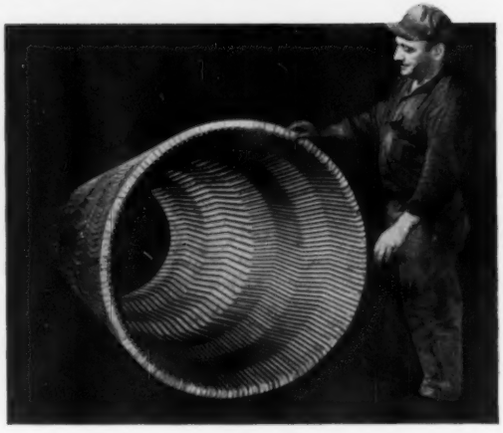
OVER 300 OF THESE **FULBAR** Shell Fillings now in use

A complete one-piece assembly, made to fit into the shell body of any Jordan, the Fulbar needs no keys or wedges. The ideal filling for an old Jordan that has had shell wear, Fulbar rigidity and accurate one-piece construction readily compensate for inequalities which would make precise fitting of a sectional filling a problem. Users report savings of up to 12 man-hours in installation time. Easy to grind in, too — and no sharp ends on bars to form strings or lumps. There are many new advantages. We'll gladly send you full details and the names of satisfied users.



NEW PULP MACHINE FOR PORT ALICE—A Black-Clawson 175-in. pulp drying machine designed to increase capacity of the mill by 50,000 tons a year has been ordered by Alaska Pine & Cellulose for its Port Alice, B.C., operation, according to W. E. Breitenbach, executive vice president.

Cost of the expansion is approximately $5,000,000 and its installation by early 1957 is a part of the $12,000,000 modernization plan.

"This machine will increase our chemical cellulose capacity to 125,000 tons a year," said Mr. Breitenbach. The machine will feature a Bagley-Sewall permanent cantilever Fourdrinier with an integrally mounted suction couch to facilitate quick wire changes.

The press part will consist of three presses including four pre-dryers between the second and third press. All top press rolls are hydraulically loaded and lifted.

A total of 98 48-in. dryers will be arranged in 5 vertical sections, equipped with rope carriers. A set of draw rolls and a 2-drum upright reel will handle rolls up to 84 in. diameter. The machine will be completely hydraulically controlled and will operate at 150 to 360 fpm.

Consultants are Sandwell & Co., Vancouver, B.C.

Presidents and Vice Presidents

BRIAN GATTIE (left), general manager, Western Forest Industries, subsidiary of Alaska Pine & Cellulose, is new President of the Canadian Forestry Association's Western Branch, and he is here being congratulated by his predecessor, M. J. FOLEY, President of Powell River Co., who headed the association for two years. Others—all Vice Presidents of the association—are (l to r) T. G. WRIGHT, Chief Forester, Canadian Forest Products; O. D. HALLIN, Vice President, Crown Zellerbach Canada; J. S. JOHANNSON, General Mgr., Public Relations, MacMillan & Bloedel.

EMERGENCY TRUCK FLEET—A rush order for 700 tons of newsprint presented Elk Falls Co. with a problem. The order received by the Duncan Bay, Vancouver Island, mill (Crown Zellerbach Canada subsidiary) was from the San Francisco Examiner, more than a thousand miles distant, and no ships were readily available. The Examiner was "caught short" as a result of the strike of Finnish mills

Are you paying for QUALITY?
Are you getting QUALITY?

CAMCO

THE QUALITY LINE IN STAINLESS STEEL FITTINGS

When you specify CAMCO on your stainless steel fitting requirements you are specifying QUALITY — without paying a premium. These fittings are priced in line with competition. How do we do it? CAMCO concentrates ALL of its facilities, efforts and thinking to the manufacture of stainless steel fittings only. The resulting economies are translated into quality and passed on to you.

FLANGES: Manufactured to both the ASA and MSS standards covering stainless steel flanges. All flanges to ASA specifications are DROP FORGED and are permanently marked with size, pressure rating, material identification, trademark, and heat numbers—(the key to certificates of analysis and corrosion coupons when required). All flanges to MSS standards are machined from DROP FORGINGS to 4" IPS, (Weldneck flanges to 1" IPS only) and from sound castings in sizes 5" IPS and higher.

SCREWED FITTINGS: All ells and tees to ¾" IPS inclusive and all cylindrical fittings to 2" IPS inclusive (caps, couplings, plugs, bushings and unions) are manufactured from DROP FORGINGS in our 150 lb. line of fittings. Independent outside tests have indicated that these fittings can be rated 1000 lb. CWP. Fittings in higher sizes of our 150 lb. line are machined from sound castings.

AVAILABILITY: Sold and stocked by distributors throughout the country and backed by large stocks at the plant for requirements in excess of normal.

Use attached coupon for Flange Dimensional Slide Rule and Catalog covering complete line.

MAIL TODAY

CAMCO Products, Inc., 445 State Street, North Haven, Conn.
Gentlemen: PP
☐ Please send Flange Dimensional Slide Rule.
☐ Catalog #653 covering complete line.
☐ Furnish address of area distributor.
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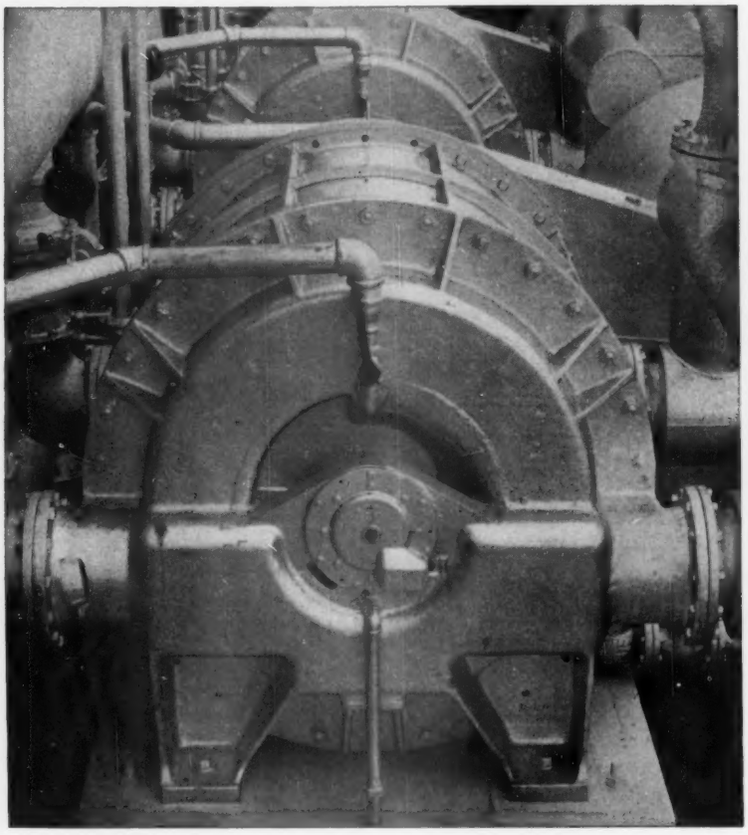
THE Quality LINE IN STAINLESS
CAMCO
PRODUCTS, INC.
445 STATE STREET
NORTH HAVEN, CONN.

High machine speeds?
High temperature headbox stock?
You need NASH Vacuum Pumps!



Air from the suction rolls on paper machines carries with it substantial quantities of moisture. This considerably reduces the effective air handling capacity of any vacuum pump except the Nash. In the Nash Vacuum Pump, because of the unique principle of operation, the bulk of this vapor is effectively condensed inside the pump. The total capacity of a Nash is therefore increased.

When you specify a Nash Pump it can be closely sized to the job. It is not necessary to select an over-sized unit, because the rated capacity of the Nash may be relied upon.

That is one of the reasons why Nash Vacuum Pumps are installed in over a thousand leading Paper Mills. An engineer from Nash will be glad to survey your mill, and make recommendations, entirely without obligation to you.

NASH ENGINEERING COMPANY

441 WILSON ROAD, SO. NORWALK, CONN.

which, with Elk Falls Co., have been its principal suppliers.

Almost overnight, a fleet of 54 transport trucks was mobilized from points as far as Chicago and Los Angeles. They converged on the British Columbia newsprint town, and Resident Manager Tommy Hargreaves cooperated with the truck dispatcher to move the newsprint in a hurry. Within 40 hours it had been delivered at the Golden Gate and the presses kept rolling.

MAY MAKE GROUNDWOOD FROM CHIPS—Powell River Co. is investigating the possibility of making mechanical pulp from chips on an economically and technologically sound basis.

"If our plans prove feasible," said M. J. Foley, president, "they will represent a revolutionary development. Large savings in wood and in cost of processing would result."

Potentialities of pulping cedar, which comprises about 25% of British Columbia coastal timber stands where Powell River Co. derives its supplies, are also receiving the company's attention.

The company is making a comprehensive study of sawdust utilization and conversion of other sawmill wastes to building boards and other new products.

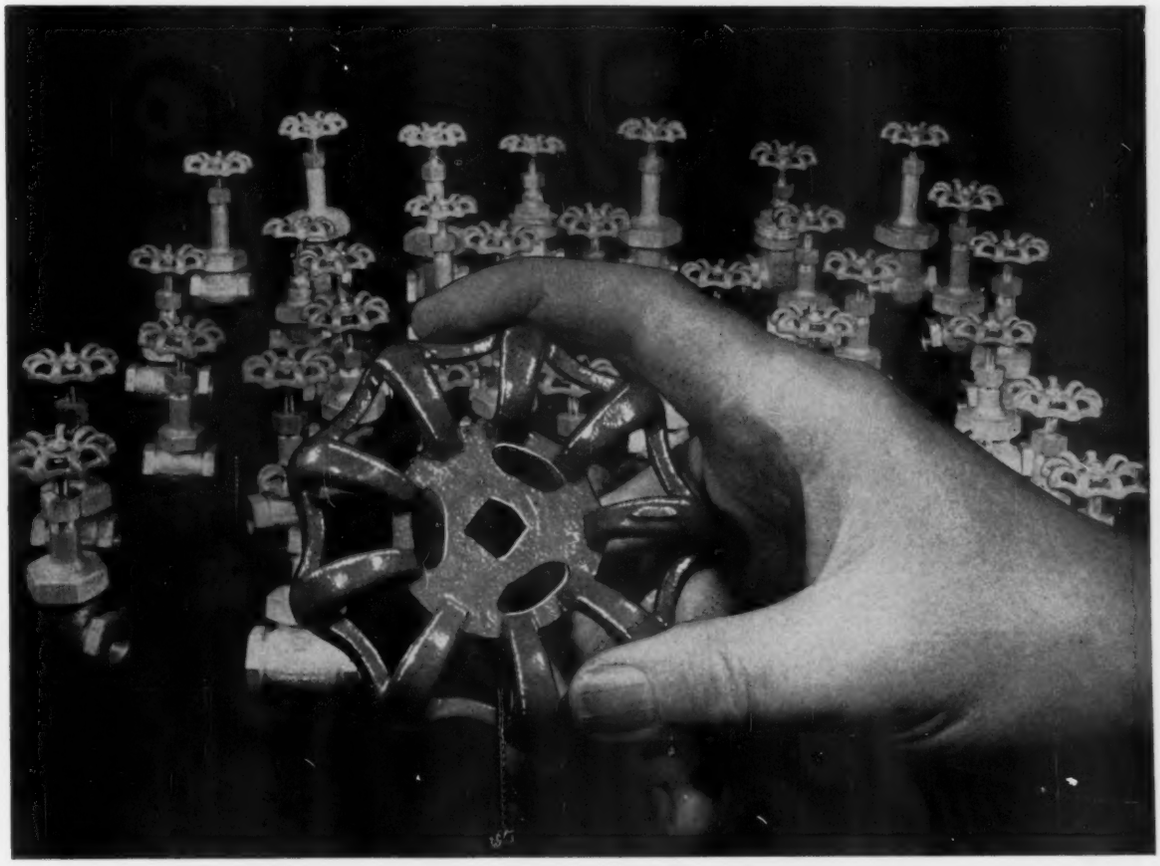
A pilot plant to test various processes along this line is to be in operation in a few months at New Westminster, where B. C. Manufacturing Co., Powell River's main sawmill subsidiary, operates.

Canada Can Use More Wood

● Canada's pulpwood forests can supply the wood to meet an increasing demand for pulp and paper products at home and abroad, H. A. Sewell, vice president, of Quebec North Shore Paper Co. and Ontario Paper Co., told the annual meeting of the Woodlands Section, Canadian Pulp and Paper Assn. in Montreal.

Mr. Sewell, re-elected section chairman, reported that growth of pulpwood in Canada during the past three decades has more than replaced the cut, and that growth studies demonstrated that the present cut is well below that which the woodlands can support in perpetuity.

Re-elected vice chairman was M. MacLaggan, divisional woods manager, Abitibi Power & Paper Co., Port Arthur, Ont. Two new councillors, A. F. Buell, woods manager, E. B. Eddy Co., Hull, Que., and G. W. Phipps, assistant general manager, woodlands, Kimberly-Clark Corp., Toronto, were elected. Ex-officio councillors Edgar Porter, manager of Quebec Forest Industries Assn., and



One handwheel fits 40* different valves

*Walworth Handwheel No. 16 fits these Walworth Bronze Valves:	
¾"	No. 32, 40, 47, 48, 205, 206, 225P, 227P, 260, 261, 260P, 261P
1"	No. 29, 30, 36, 37, 91, OX91, 92, 95, 96, 160, 161, 235, 236, 245, 246, 245P, 246P, 237P, 238P
1¼"	No. 58, 59
1½"	No. 2, 3, 4, 11, 12, 14, 24

Only Walworth Bronze Valves give you this degree of interchangeability

With standardized Walworth Bronze Valve parts you maintain the greatest number of valves with the smallest inventory of basic parts. Handwheels are just one example. Fourteen different sizes of handwheels are all you need for fifty lines of gate, globe, and angle valves, involving 420 individual valves.

The Walworth system of interchangeability of parts for Bronze Valves is unsurpassed by any manufacturer in the field. In addition to Bronze Valves, Walworth produces valves and pipe fittings of iron, steel, special alloys, and rigid polyvinyl chloride (PVC).

Learn more about Walworth interchangeability. Contact your local Walworth Distributor or nearby Walworth Sales Office. Ask for literature.

WALWORTH

60 East 42nd Street, New York 17, New York

SUBSIDIARIES: ALLOY STEEL PRODUCTS CO. · CONOFLOW CORPORATION · M & H VALVE & FITTINGS CO. · SOUTHWEST FABRICATING & WELDING CO., INC. · WALWORTH COMPANY OF CANADA, LTD.

New **ACE RIVICLOR®**

Corrosion-resistant plastic piping

RIVICLOR, newest of all rigid plastic pipe, heads the list for resistance to chemicals and excellent aging characteristics . . . plus high strength, toughness and easy workability.

Riviclor is unplasticized polyvinyl chloride, specially formulated for process piping. Non-toxic, non-flammable, excellent insulating properties. Only half weight of aluminum. Never needs painting. Smooth inner surfaces give you high flow rates with low loss of head.

Approved For Use With Drinking Water

Use Riviclor for all in-plant piping of mild or strong corrosives at normal temperatures . . . for liquid lines where "sweating" or corrosive vapors are problems . . . for underground piping. Pipe, fittings, diaphragm valves from ½" to 2".

Ask for Technical Bulletin CE-56.

ABBREVIATED TABLE OF CHEMICAL RESISTANCE

ACIDS		BASES		MISCELLANEOUS			
Acetic 50%	S	Ammonium Hydroxide 28%	S	Ethyl Alcohol	S	Carbon Tetrachloride	S
Chromic 25%	S	Sodium Hydroxide 50%	S	Methyl Ethyl Ketone	U	Plating Solutions	S
Hydrochloric 38%	S	HALOGENS		Gasoline	S	Photographic Solutions	S
Hydrofluoric 50%	L	Sodium Chloride Sat.	S	Mineral Oil	S	KEY: S—Satisfactory	
Nitric 20%	S	Ferric Chloride	S	Animal Oil	S	L—Limited to certain applications	
Sulphuric 50%	S	Sodium Hypochlorite 5%	S	Vegetable Oil	S	U—Unsuitable	
Sulphuric 98%	S			Phenol 10%	S		
				Chlorine 5%	L		
				Alum	S		

ACE processing equipment of rubber and plastics

AMERICAN HARD RUBBER COMPANY

93 WORTH STREET • NEW YORK 13, N. Y.

C. R. Mills, Ontario Forest Industries Assn., were confirmed in office.

Members of the executive council of the section are elected for 3-year terms. The two new councillors replaced F. L. Flatt, Spruce Falls Power & Paper Co., and R. R. Douglas, Alaska Pine & Cellulose. Other members of the council, previously elected, are J. W. Fries, St. Lawrence Corp.; J. A. Michaud, Consolidated Paper Corp.; E. K. Robinson, Howard Smith Paper Corp.; F. A. Harrison, Canadian International Paper Co.; R. G. MacFarlane, Fraser Companies; A. H. Burk, KVP Co.

Discussion of new forms of mechanization exemplified by a 4-wheel logging tractor developed by the section featured the sessions, and R. G. Belcher and W. H. Martin of Canadian International Paper Co. described a new method they had developed for measuring the amount of wood floating down a river or passing over a conveyor.

NEW WAY TO MEASURE FLOATING WOOD—Demonstrated at the meeting, it is now in use at CIP's LaTuque mill and measures the wood moving out of the St. Maurice River into the mill. It consists of a series of photographs of the wood taken at regular intervals as it moves up the conveyor. Floodlights provide illumination for the picture and a heater fan disperses any early morning fog which might cloud the picture. The operator simply counts the number of logs in each picture and calculates, with the aid of a formula, the amount of wood which has gone up the conveyor during the day.

This new process is said to be more reliable than having 4 or even 5 operators counting the moving logs and better than mechanical counters which may be thrown off by especially large or small logs.

Principal guest speaker was Richard E. McArdle, chief of U.S. Forest Service, who said that in Canadian-U.S. relations the significant facts were: (1) One third of all Canadian output of timber products is exported to the U.S.; (2) Of all U.S. imports of timber products, 90% originate in Canada; (3) About 10% of all U.S. consumption of timber products is imported from Canada.

Mr. McArdle pointed out that Canada has 47% more forest land than the U.S. and about 8% more commercial forest land. It has 72% more forest acreage in softwood types, but only half as much in hardwood types as the U.S. With regard to timber volume in trees of all sizes, Canada has about 80% as much as the U.S., with softwood volumes about equal.

How perfectly simple —this Fast's Coupling with purely mechanical flexibility!

1. A hub is keyed on each shaft. Hubs are splined at maximum distance from shaft ends.

2. Floating sleeves surround hubs. Sleeves are splined to engage hub splines.

3. Sleeves compensate for shaft misalignment by assuming neutral position between two hubs.

4. Because of distance from shaft end, any misalignment between splines is mere fraction of same misalignment between shafts.

5. Sleeves carried on bearing rings, located on *transverse center line of hub spline faces* (the load-carrying surfaces) . . . no crank action, no vibration.

6. Lubricant is centrifugally forced into spaces between engaged splines, forming a film.

For 35 years the most positive, dependable means of coupling machines to their power source . . . Fast's Couplings have no parts subject to repeated bending, tension or compression. Because there is no metal-to-metal contact, *there is no wear*—in fact, many Fast's Couplings in use for over 30 years show no signs of wear when disassembled! No leather, plastic or rubber oil seals. Lubricant film distributes pressure over a considerable area, diminishing localized stress at pressure points on the load-carrying teeth. Perfectly simple? Yes . . . and foolproof!

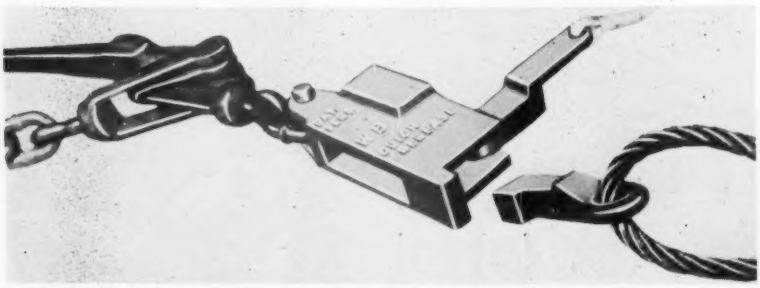
For coupling catalog, technical advice or assistance from Koppers field engineers, write: KOPPERS COMPANY, INC., *Fast's Coupling Dept.,* 2706 Scott Street, Baltimore 3, Maryland.

THE ORIGINAL **FAST'S Couplings**

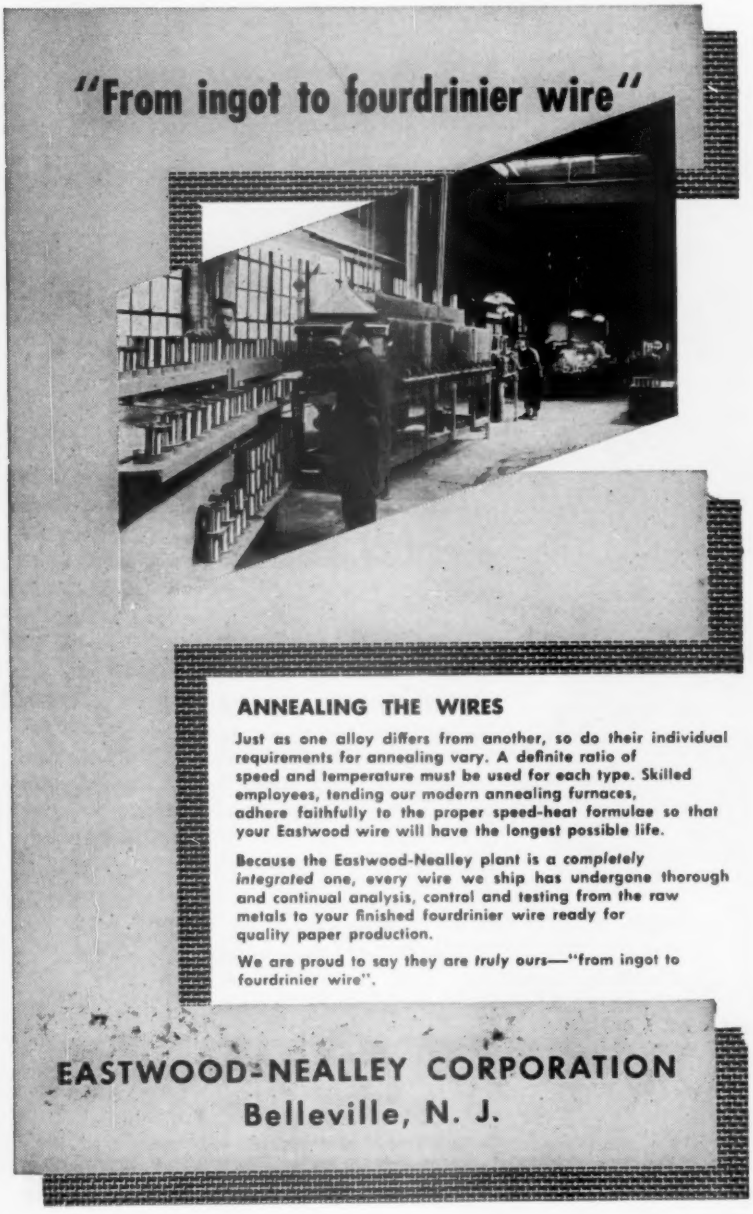
KOPPERS

METAL PRODUCTS DIVISION • KOPPERS COMPANY, INC. • BALTIMORE 3, MD.
This Koppers Division also supplies industry with American Hammered Industrial Piston and Sealing Rings, Industrial Gas Cleaning Apparatus, Aeromaster Fans.
Engineered Products Sold with Service.

EQUIPMENT AND SUPPLY NEWS



LOG-LOAD BINDER WITH QUICK ACTING SAFETY RELEASE, new product manufactured by Electric Steel Foundry Co., Portland, Ore. The release, developed by Logging Supt. Charles A. Wilson and Master Mechanic Gordon Boyes, of J. Neils Lumber Co., permits an operator to release the binder while standing clear of the load.


"From ingot to fourdrinier wire"
ANNEALING THE WIRES
Just as one alloy differs from another, so do their individual requirements for annealing vary. A definite ratio of speed and temperature must be used for each type. Skilled employees, tending our modern annealing furnaces, adhere faithfully to the proper speed-heat formulae so that your Eastwood wire will have the longest possible life.
Because the Eastwood-Nealley plant is a completely integrated one, every wire we ship has undergone thorough and continual analysis, control and testing from the raw metals to your finished fourdrinier wire ready for quality paper production.
We are proud to say they are truly ours—"from ingot to fourdrinier wire".
EASTWOOD-NEALLEY CORPORATION
Belleville, N. J.

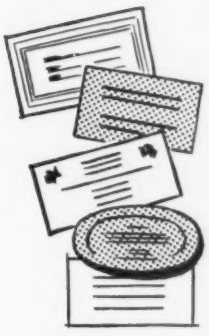
CRANE PACKING CO. announces a complete line of chemically inert mechanical seals for handling all types acids, corrosives, solvents and gases. A bulletin provides construction, service and application information. The seals are "John Crane" Types 9, 9B and 9A in various construction styles. The seals incorporate sealing members fabricated from DuPont Teflon. They can be used over a wide range of temperatures, −120°F. to +500°F., and pressures to 750 psi. Request Bulletin S-205-2 from Crane Packing Co., Dept. PPC, 6400 Oakton St., Morton Grove, Ill. In Canada —617 Parkdale N., Hamilton, Ont.

INTERNATIONAL DROTT SKID-SHOVEL is a versatile 1 to 2¼ yd. capacity machine, a new 8-page, 2-color mailing folder shows. Advantages are listed as the "pry-over-shoe" breakout, skid-shoe action, description of its depth-gauge indicator for straight-forward loading, parallelogram raise action, and shock-swallowing protection of its patented Hydro-Spring. Also described are a variety of attachments, including log and pulpwood rack, blades and buckets. Ask for booklet CR-407-F, Consumer Relations Dept., International Harvester, 180 N. Michigan Ave., Chicago 1, Ill.

INTERNATIONAL'S Diesel crawler tractors are described in a 6-page, 2-color mailing folder. Described are International TD-24, TD-18, TD-14, TD-9, and TD-6 models, with photographs on the job and close-ups of Cerametallic clutch facings, improved operator visibility, push-button starting, etc. Ask for booklet CR-553-F, Consumer Relations Dept., International Harvester Co., 180 N. Michigan Ave., Chicago 1, Ill.

DYNAMATIC DIVISION, EATON MFG. CO., Kenosha, Wis., announces it has developed and can now supply its adjustable speed, fractional horsepower, Ajusto-Spede Drives with integral electrically operated fail-safe friction brakes. This development was to meet the need for fast stopping or cycling operations. Brakes are available in two ratings, 18 and 36 lbs./in. of torque. The small single package drive is an integral combination of ac constant speed induction motor, eddy-current coupling, friction brake and electronic control. A simple connection to a standard power line is only wiring required. Write for free copy of Dynamatic's Fractional Horsepower Ajusto-Spede Drive Bulletin, Eaton Mfg. Co., Cleveland 10, O.

BLACK-CLAWSON CO. Dilts Machine Works Div., is featured in issue No. 338 of The Messenger, available from Dilts at Fulton, N. Y. Described are complete converting machines, Contracoaters; moisture applicator; waxers; Warren-Dilts air brush; Dilts water finish tower for hardening wax coatings; tension holdback; pilot plant clay coater and waxer; impregnator and tube winder; etc.



. . . for better gummed paper

BETTER FINISHES WITH

Butterworth

DURA-SMOOTH CALENDER ROLLS

Adequate resiliency on the face of each Butterworth Dura-Smooth Calender Roll produces a finish soft enough to allow high-speed printing. And exactly the right degree of hardness, smoothness and density in every Butterworth Roll means top quality finishes . . . better in appearance . . . better in printing quality.

Made of the finest long staple cotton or paper, Butterworth Dura-Smooth Rolls are furnished new or refilled, for coated, super, glassine or embossing applications. For information or quotation, write or call.

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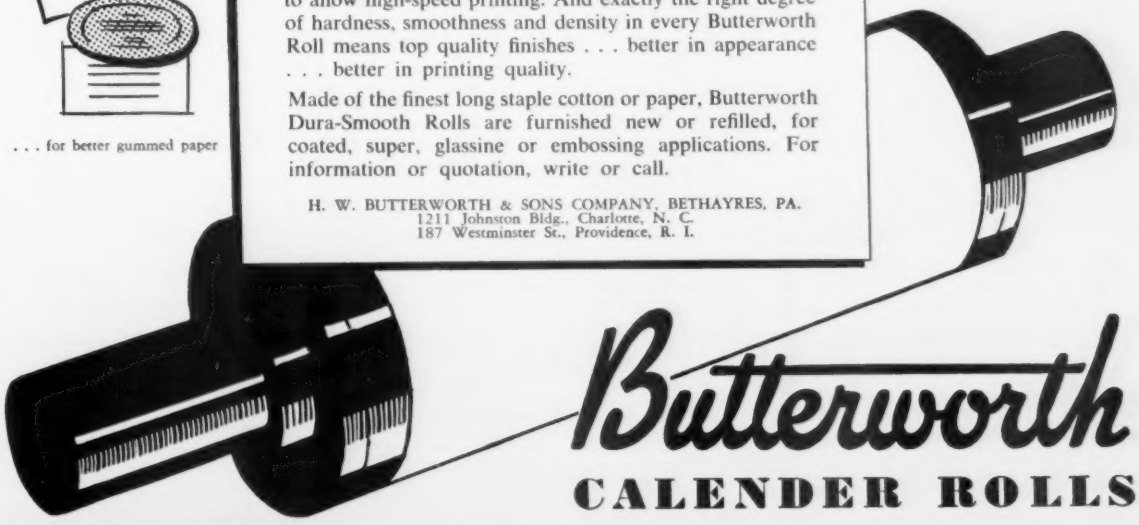

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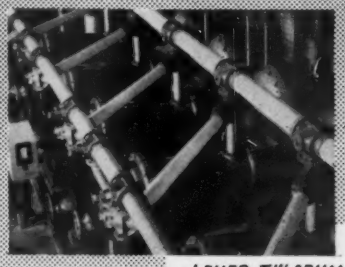

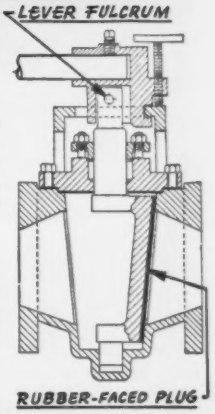

The tapered-plug design of DeZurik 3-Way and 4-Way Valves assures easy operation . . . and drip-tight closure . . . every time! The plug is unseated by raising the operating lever; it turns easily to the desired position where depressing the lever re-seats the plug dead shut. Plugs can be rotated through 360 degrees — and they NEED NO LUBRICATION!

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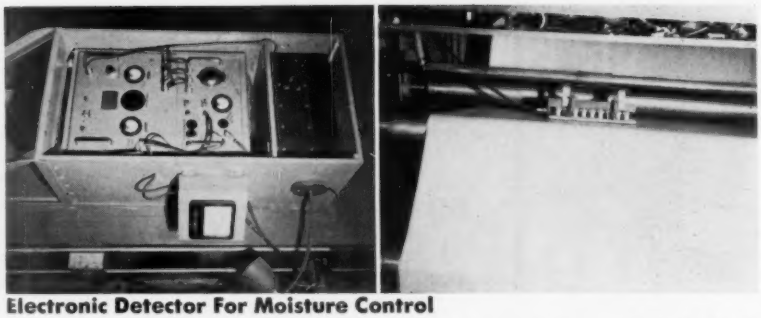

Electronic Detector For Moisture Control

Western Gummed & Coated Products Division of Crown Z Corp., North Portland, Ore., utilizes an electronic moisture detector to accurately control moisture content of coated sheets. This Laucks Laboratories (Seattle) Sentry, is just ahead of gumming machine's re-wind to continuously indicate moisture content of moving web as it comes from machine. Encased Sentry unit is set to side of dryer (in picture at left). An electrode on top side of sheet between dryer and re-wind reel (picture at right), continuously transmits electric impulses to main unit. Impulse characteristics, which change according to type, weight and moisture content of sheet, are meter-indicated. Operator makes compensating adjustment of machine speed and/or temperature in dryer.

ROSS ENGINEERING CORP. will send you its bulletin No. 54 on Industrial Dryers and a supplement to it, just printed, if you write to Ross at 444 Madison Avenue, New York 22, New York.

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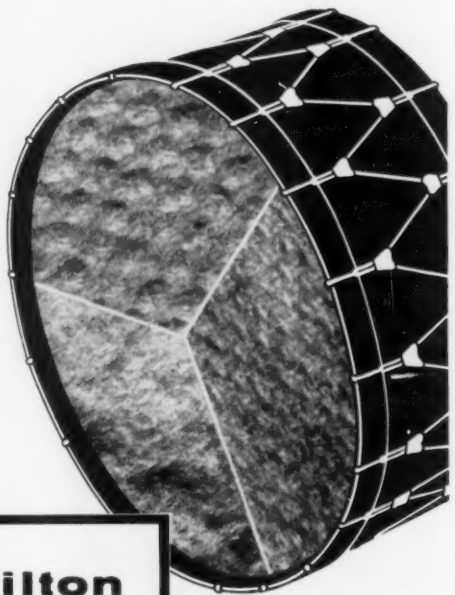

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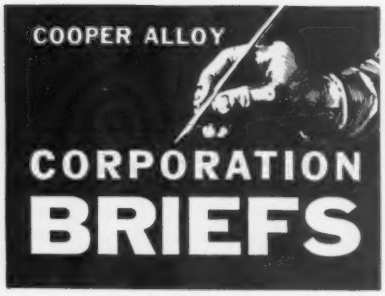

● Edited by GEORGE BLACK

ENGINEERING DATA BOOK

Another section of the new Cooper Alloy catalog being readied by the Valve and Fitting Division is now available. Referred to as "Stainless Steel Engineering Data," this 16 page manual includes a variety of tables and charts of reference value for those who work with stainless steel valves, fittings, pipe, tubing or castings. Your copy is waiting.

ADVANCED KNOW-HOW #1

The full story behind the Shellcast® stainless steel jet engine support rings being turned out by the Foundry Products Division of Cooper Alloy is told in Advanced Know-How Report #1. The problem, the specifications and the solution are covered in detail with text and photos. Write for your copy.

PUMPING ETCH ROOM SOLUTIONS

Transferring acids and salt solutions used in the Etch Room of Litho Chemical & Supply Co. caused repeated pump failure and constant shaft seal maintenance. Five years ago a Vanton plastic pump (no stuffing box, no shaft seals) was put into daily service. Customer reports "no maintenance except lubrication." Full story appeared in Chemical Processing. Reprint available on request.

QUIKUPL DATA POPULAR

Since the publication of the May issue of Newscast which featured this patented fitting, the requests for additional data have been pouring in. In case you missed the issue, may we remind you that copies are still available. Full engineering data, case histories and photographs are included, making it possible for you to see for yourself just how this unique stainless steel fitting can cut your installation and operating costs.

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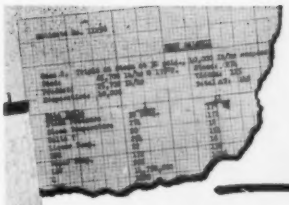

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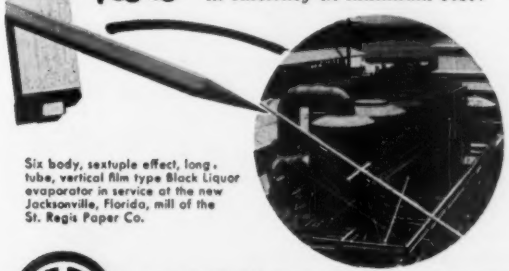

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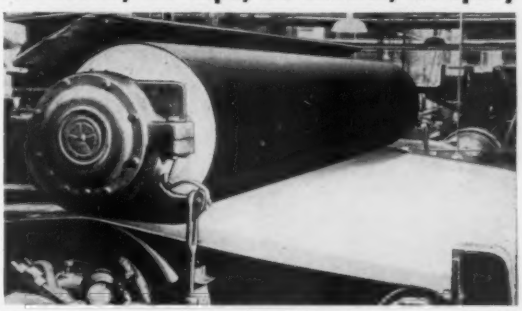

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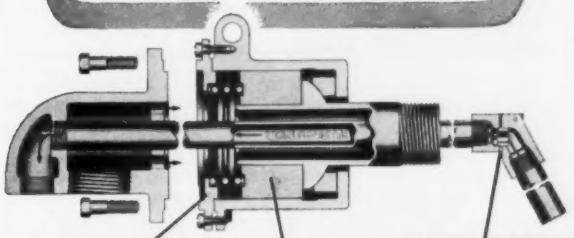
Johnson Joint
SELF-SUPPORTED TYPE
with SYPHON ELBOW



ASSEMBLY PLATE — Holds internal parts in position when head is removed.

SELF-SUPPORTING — Needs no external supports of any kind.

SYPHON ELBOW — Permits use of straight pipe for syphon. Can be inserted or withdrawn right through the joint.

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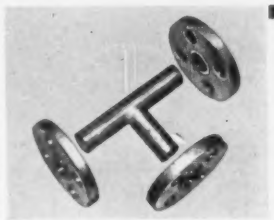

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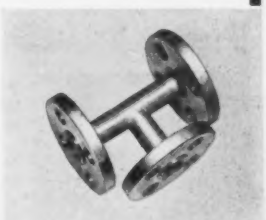

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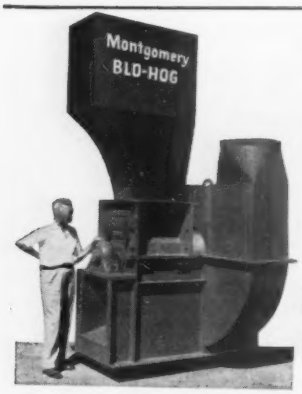

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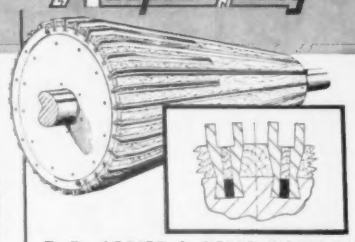

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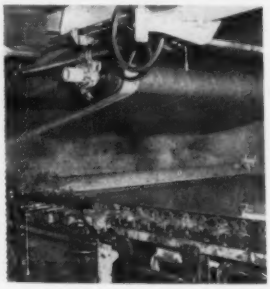

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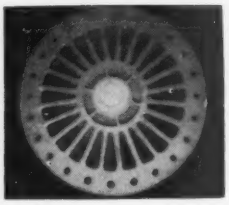

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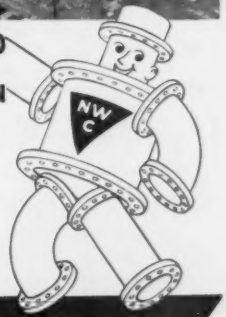

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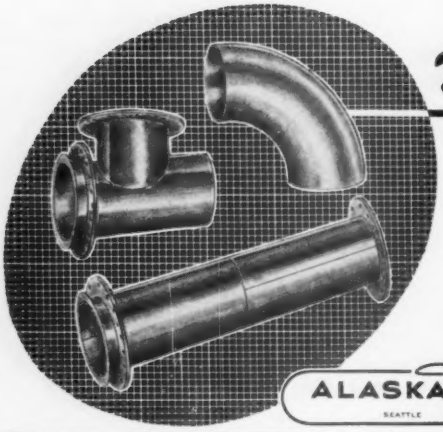

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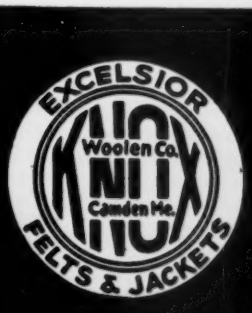

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The LAST WORD — PULP & PAPER — EDITORS' PAGE

Wet Strength Tissue Scare

In the highly competitive tissue world, rash actions may be taken. We are not trying to be funny about rashness when we mention that one firm felt impelled to engage two New York doctors to research a skin reaction to a competitive tissue. With unseemly alacrity, the medicos came up with a finding that wet strength resins in facial tissues can sometimes cause skin irritation.

Such scare propaganda can easily boomerang. We are a nation beset with more allergies than our fathers ever dreamed of. Coupled with this is a brooding absorption in health matters, which quickly magnify trivial hygienic matters.

If Mr. John Q. got really scared, would he take a chance on any tissues? There might be hidden dangers in all. And what about towels, food wraps and textiles with wet strength? There are some people who will react to even the purest cellulose.

The matter was blown up. A medical journal and a company publicity release voiced dire warnings. Only three of 50 people showed minor sensitivity. Could the blanks have been a bad lot? Were the subjects highly allergic? Who, in his right mind, would hold a piece of tissue to his face for 24 hours? Before this ever happened, makers of resins had done at least five years of wet strength biological work with many hundreds of patch tests—with favorable results.

We think this is a classic case where a research job, to be respected and useful, should have been done cooperatively by the whole industry.

Salute to Paper Industry

A picture story of the process of making paper—from the forest through the paper mill to finished products—is now featured in an exhibit in the famous Disneyland at Anaheim, Calif., thanks to the Crane Co.

Many thousands of persons, young or old, flow through this "magic kingdom," created by Walt Disney. The pulp and paper industry is well aware of this fact, and therefore is appreciative of what this display will do for it.

Crane's important role in this industry, of course, is also shown. A Crane pulp stock valve, for example, shows how specialized valves are important in papermaking. This industry shares prominently with the Chicago manufacturer in the latter's display.

Primary vs. Secondary Interests in Canada

In view of all the talk, political and otherwise, appearing in Canadian newspapers these days about U.S. industrial domination of Canada, due in part to an address given in Vancouver B.C., recently by the retiring U.S. Ambassador, it is interesting to note the address given not long ago in Toronto, hot bed of high tariff, by H. R. MacMillan, former chairman of the board, MacMillan & Bloedel, and outstanding Western Canadian industrialist.

Mr. MacMillan was sharply critical of Canadians for dragging their feet on investment in their own industry and condemned the idea that high tariffs are going to help Canada in the long run.

After pointing out that Canada would be the loser in any campaign of nationalism or threat to friendly relations with the U.S., Mr. MacMillan said that the so-called "hewers of wood," such as the forest products industries in Canada, haven't been doing too badly under present conditions, so why stir up a lot of fuss about U.S. economic domination or U.S. utilization of Canadian raw materials?

Mr. MacMillan said that, after all, Canada's primary exports are the lifeblood of the country and that secondary industries, which are the ones clamoring for tariff protection, will gain any advantage only at the expense of the more important primary industries by increasing costs of production and thus shrinking the market.

Some interesting figures were quoted by Mr. MacMillan to show how tariffs have already made it costlier to build pulp mills in Canada than in the U.S. Here are the costs per unit which he quoted, the first figure being delivered price in Vancouver and, in parentheses, the cost in U.S. (Seattle):

Blow tank, $58,000 ($43,500); recovery boiler, $928,000 ($760,000); evaporator, $267,000 ($191,000); pulp washer, $170,000 ($125,000); chipper, $105,000 ($78,000); boiler, $255,000 ($210,000); truck tire, $354 ($265).

Railroad Rates and Efficiency

Most pulp and paper industry executives—by the far, the majority, we would say—were both sympathetic and agreeable to the recent 6% increase in freight rates. In fact this was 1% less than had been contemplated.

If there were any complaints from this industry, they were only from isolated individuals, and mighty few at that.

Freight cars account for roughly one-fifth of the total investment in railroad facilities and produce over four-fifths of railroad revenues.

Inefficiencies or waste in the operation of the freight car fleet must be reflected in rail rates if the railroads are to remain in business. So to keep rates down, this industry can help itself. For freight cars, to a greater extent than any other industrial production machine, are in the control of the railroads' customers a considerable portion of their life—during the processes of loading and unloading, and during loaded movement as directed by the shipper.

It follows that shippers and receivers are vitally concerned in increasing the efficiency of freight car use and handling, and have exceptional opportunities to better the performance of these transport production units.

There are three basic means of increasing car loading efficiency. These are: (1) Loading cars so far as practicable to or toward owners rails, (2) Fastest practicable turnaround, embracing prompt rail loading and unloading, etc., and (3) Heaviest practicable loading consistent with business needs.

Getting Down To Facts

The only continuing sources of revenue for pulp and paper companies are the dollars they get from customers and the sums they get from investors, big and little.

The pulp and paper companies must pay out for materials, wages, employe benefits, interest, taxes and all the other costs of doing business. What is left over is profit. It is the size of the profit which determines the ability of each pulp and paper company to attract the capital it needs for expansion.

It is on these things, and these alone, that the ability to meet a great potential future demand for pulp and paper depends. And more and better jobs in this third fastest growing industry depend on these things too—and these only.

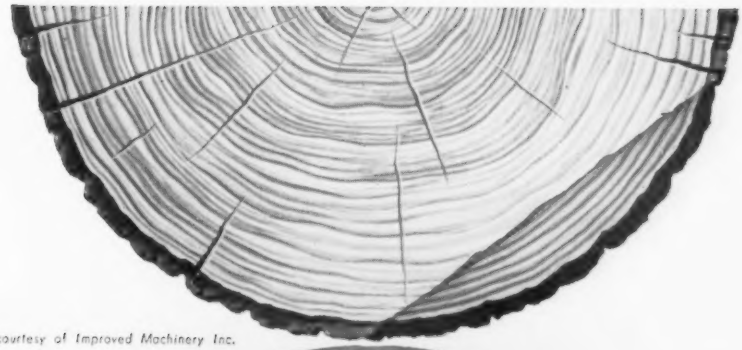
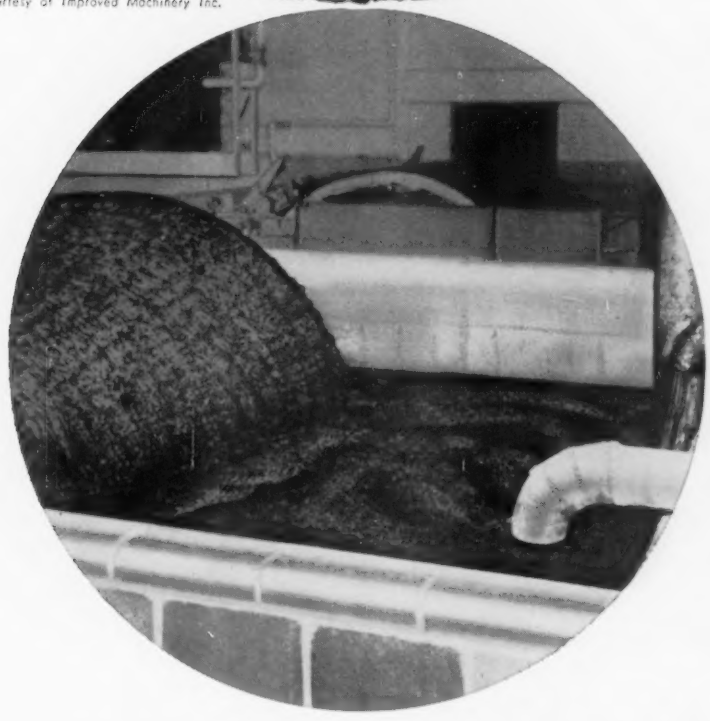


Photo courtesy of Improved Machinery Inc.



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